



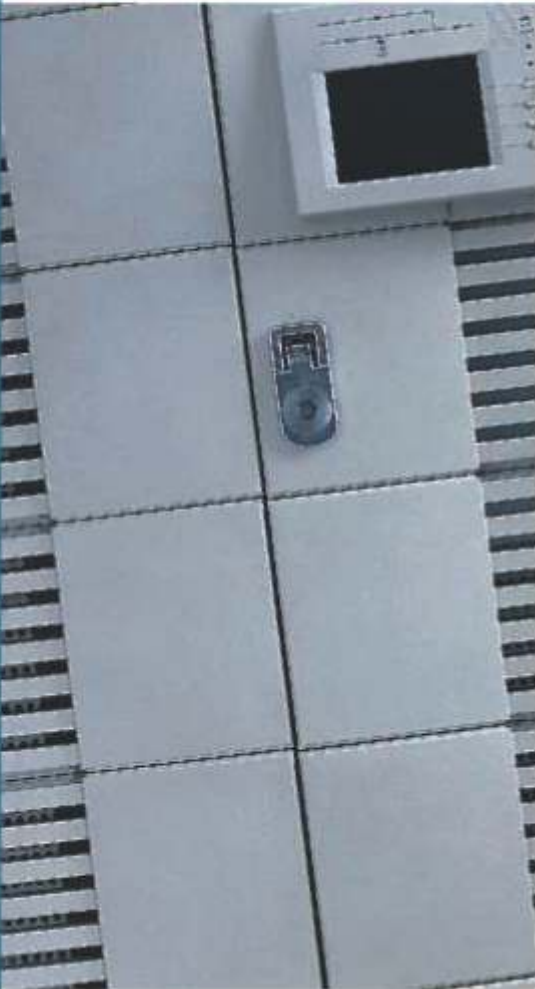
Liebert iTrust 3-Phase UPS System

Power Availability

TRUE ON-LINE SINEWAVE UPS SYSTEM FOR THE NETWORKED ECONOMY



iTrust3-Phase



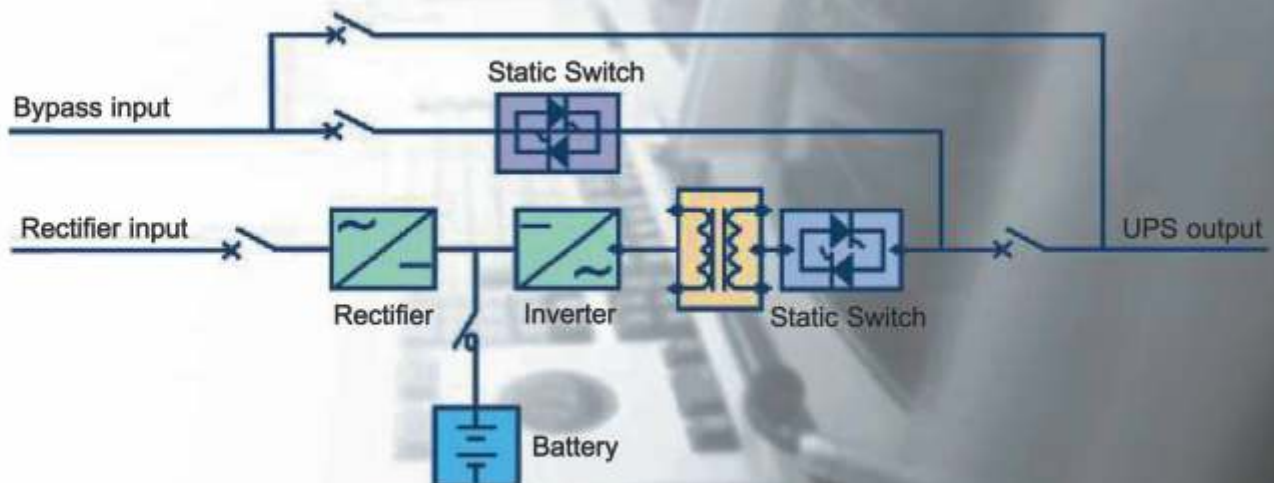
Advanced UPS System that offers Round-the-Clock Secure Power for Data Centers, Server Farms, Telecom, Medical and Industrial Applications



iTRUST 3-PHASE UPS SYSTEM AT YOUR SERVICE TODAY and EVERYDAY

The Liebert iTrust 3-phase is a true on-line sine wave 3x3 UPS system that provides the user with clean computer grade power for continuous operation of his critical load, regardless of any disturbance on the upstream AC power. The system offers many innovative features to give the user maximum reliability and flexibility at the lowest operating cost. With Liebert iTrust 3-phase UPS system, you have complete peace of mind.

- 30, 40, 60 kVA Models
- Full Digital Signal Processing using the latest DSP technology
- Parallel operation for Redundancy or Capacity enhancement
- Wide Input Voltage Range
- Active Rectifier design
- Low Current Harmonic Distortion of less than 3%
- High Input Power Factor
- Joint Mode Operation
- High Overload and Short-Circuit Capacities
- Continuous overload on bypass upto 135%
- Compatible with Engine Generators
- High Reliability for Maximum System Availability
- Handles 3:1 Crest Factor Loads
- Intelligent Battery Management
- Large LCD Display and Mimic Panel for Real-time information
- Output Isolation between UPS and Critical Load
- IP21 Protection Level
- Low Electromagnetic Interference
- Complies with EN50091-2 Class A
- Internal C - level Lightning Protection



STATE-OF-THE-ART FEATURES IN A COMPACT SYSTEM

IGBT Rectifier

Employing the latest rectifier technology, the iTrust IGBT rectifier offers an input power factor of greater than 0.99, and input current distortion of less than 3%. Therefore it does not pollute the input utility supply or other devices sharing the same utility source.

IGBT Inverter

High speed IGBT inverter gives low output distortion and clean sinusoidal waveform for excellent performance and high reliability. Both IGBT rectifier and inverter share common parts which means the UPS is easier to maintain.

Digital Signal Processing

The iTrust uses the most advanced DSP technology. Using high sampling rate possible only with DSP, output and system parameters are tightly controlled and maintained throughout the various modes of operation.

Battery Management

Proper testing, charging, discharging and management of the battery system is a very important aspect of the UPS control system. In the iTrust UPS, the batteries are constantly monitored by an intelligent battery management algorithm. Any fault detected in the batteries is immediately reported to the user.

Paralleling Capability

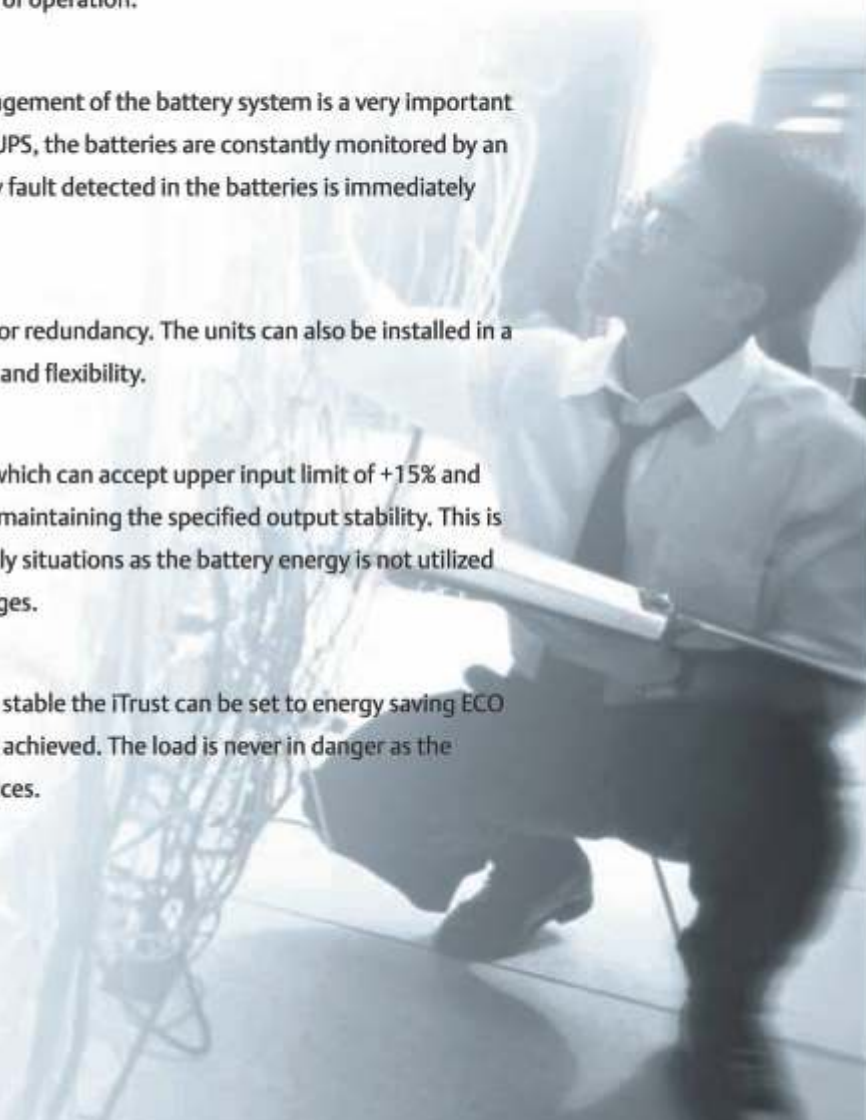
The iTrust can be paralleled for added capacity or redundancy. The units can also be installed in a Hot-Standby configuration for added reliability and flexibility.

Wide Input Voltage Range

The iTrust features a wide input voltage range which can accept upper input limit of +15% and can have a lower input limit of -45%, while still maintaining the specified output stability. This is extremely useful in very poor input power supply situations as the battery energy is not utilized and can be preserved for more prolonged outages.

High Efficiency ECO Mode

In situation where the utility supply is relatively stable the iTrust can be set to energy saving ECO mode. An efficiency of greater than 97% can be achieved. The load is never in danger as the switching is done by high speed solid state devices.



User Friendly Display and Communication

The LED mimic diagram gives clear indication of real time status and power flow through the UPS. Dual-colour LED indicates the status of major modules.

The neatly displayed push-buttons give functions such as menu selection, inverter startup and shutdown, emergency shutdown and alarm.

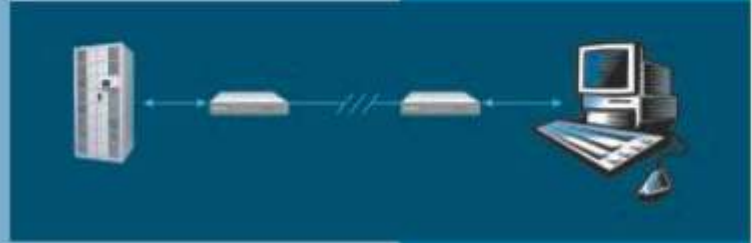
The large LCD graphical display provides an array of performance parameters, fault information and 220 historical event log that are useful for troubleshooting

COMMUNICATIONS

Communication to the outside world is never a problem with the Liebert iTrust. The system provides voltage-free relay contact of common alarms, RS232 & RS485 signals for remote monitoring, and SNMP (optional) for web-based monitoring.

In addition, each system comes with a standard monitoring software that can be used to monitor a single unit or units in parallel through RS232 or Modem connection.

With self-diagnosis and self-protection, audio and visual alarm indications are available and these alarm notifications can be sent by e-mail or paging to the service personnel.

A screenshot of the LCD graphical display showing system parameters and event log. The display is blue with white text. The top line shows 'UCC3000L 2001-11-08 12:30:00'. Below that, it shows 'Inv. On: Off' and 'ID: 1'. The main display area is divided into sections for 'System', 'Ckt', 'Load', 'System', 'Battery', and 'Records'. The 'System' section shows 'Power KW/220 220 221', 'Cap. KVA/11.8 12.3 12.3', 'Load% 30.2 50.1 50.1', and 'Charger 1.41 1.42 1.41'. The 'Records' section shows 'Input Breaker Close 11-08-12:38', 'Bip. Breaker Close 11-08-12:38', 'Output Breaker Open 11-08-12:38', 'UPS in Normal Mode 11-08-12:38', and 'Bat. Boost Charging 11-08-12:38'.

User friendly interface panel consists of a LED mimic diagram, 9 push buttons and a large blue 120mmx 90mm graphical LCD Display



Specifications

Capacity		30kVA	40kVA	60kVA
Rectifier Input	Input voltage	380/400/415v [line-to-line voltage]		
	AC power input	three-phase three-wire		
	Power factor	≥0.99		
	Harmonic current	<3%		
	Highest operating voltage	+15%		
	Lowest operating voltage	-45%		
	Input current limit	when input current is smaller than 115%In, UPC can operate continuously; when input current is 115-140%In, the UPC can operate for 5 minutes; and when input current is 140-165%In, the UPC can operate for 1 minute; current limiting function is activate when input current is over 165%In (In = the rated output current at full load)		
	Frequency range	50Hz±10%		
Bypass Input	Input voltage	380/400/415v [line-to-line voltage]		
	Input voltage range	±10%		
	AC power input	three-phase three-wire		
	Frequency range	50Hz ± 10%		
	Voltage regulation [Balanced load]	380/400/415V±1% (±5% adjustable)		
	Voltage transient response	+5%[0~100% linear load]		
	Voltage distortion [linear load]	THD<1% [line-to-neutral voltage] [battery float charge state, rated balance load]		
	Voltage distortion [nonlinear load]	THD<4% [line-to-neutral voltage] [battery float charge state, rated balance load]		
	Power factor	0.9 [lagged]		
	Frequency syn. Range	50Hz ± 2Hz		
	Frequency regulation [Battery mode]	±0.1%		
	Phase displacement [Three-phase]	120 ± 1 [balanced load or unbalance load]		
	Overload capability [inverter]	105% load < 125%, transfer to bypass mode after 10~30 min; 125% < load < 150%, transfer to bypass mode after 1 minute; When load > 150%, transfer to bypass mode after 200 ms		
	Overload capability [bypass]	135% rated current continuously 135%~170% for 1 minute > 170, shutdown in 2s 1000% rated current for 20 ms [a standard for selecting static switch]		
	Ratio of output current peak Value to RMS value	3:1		
	Transfer time [normal mode]	0 [uninterrupted transfer], 15ms [interrupted transfer]		
	Display	LCD + LED		
EMC/EMI	conduction	EN 50091-2		
	Radiation	EN500919-2 CLASS-A		
	Harmonic	IEC1000-3-4		
	Immunity	EN 61000-4-2,3,4,6,8,9,11 level III, EN 61000-4-5 IV		
	MTBF [single UPS]	150,000 hours		
	MTBF [1+1 parallel operation System]	400,000 hours		
System	Audible noise at 2m	<60dB		<65dB
	Cross current without load [1+1]		<1A	
	Cross current without load [3+1]		<2A	
	Current unbalance rate [1+1]		<2%	
	Current unbalance rate [3+1]		<3%	
	Insulation resistance		>2M [500Vdc]	
	Dielectric strength		[input to earth, output to earth] 2820Vdc, leakage current lower than 3.5ma 1 min Without arc	
	Surge immunity		satisfy the class IV requirements specified by IEC60664-1, The ability to withstand 1.2/50us not lower than 6ka/3ka	
	Protection Index		IP21	
	Installation	Cable access mode	top/bottom cable access modes optional	
	Physical dimension [WxHxD] mm	600x1400x860	800x1800x860	800x800x860
	Weight [kg]	528	654	811



WE HELP YOU GET IT RIGHT - RIGHT FROM THE START.

Liebert iTrust 3-Phase UPS System

Power Availability

For over 35 years, Liebert has been providing tailored solutions for protecting the operation of critical electronic systems in a variety of industries. From communications to industrial business networks, we have used our expertise to tailor the right products, site monitoring and global service capabilities into a variety of specific solutions.

Liebert's years of experience and knowledge of leading edge technologies enables us to truly understand your needs both in terms of over all reliability and specific areas of equipment protection. Whether it's a new or existing facility, we listen to you and your preferences to help develop solutions that are right for your application. Liebert is the climate control and AC power solution product division within Emerson Network Power.

Someone Nearby to Help Before And After The Sales

Specifying a high-availability facility support system requires someone who is knowledgeable in all phases of environmental and power protection. Knowing where to turn for ongoing maintenance or service is just as important.

One of the many things that differentiate Emerson Network Power from others in our business is local presence. We have the most extensive sales and service network in the world. Emerson's extensive network of technical sales associates, backed by the industry's largest service organization, enable us to respond quickly to customer needs.

Emerson Network Power

Representing Liebert, Emerson Energy Systems and ASCO Power Technologies, Emerson Network Power is uniquely positioned to provide you ent-to-end system solutions with the Widest Scale, Size, Breath, Technology & Geographic Presence. Emerson Network Power, a business group of Emerson, has offices in all parts of the world and serves customers in more than 100 countries.

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