



# CATALOGUE

## Inform Company Profile

Inform Electronic, one of the European leading power solution specialist, is established in 1980 with the aim of designing and building industrial electronic systems. Soon after, it diversified into the production, and marketing of standard professional electronic equipment, and special projects.

The company always combines its experience with its innovative identity and is recognized by its worldwide technology leading character. Right business understanding of Inform makes the company one of the most wanted brands in the world with its exceptional growth ratio. The Company has 27,500 m<sup>2</sup> closed production area, committed to the manufacturing of electrical products and electronic equipments.

Analysing infrastructural conditions, and customer needs, the company decided to provide complete solutions. Inform product range varies from Uninterruptible Power Supply (UPS) Systems, Voltage Regulators, to DC Power Supply, Telecom Equipments, Battery chargers, Inverters, 19' rack cabinets and other electrical products and electronic equipments.

Since its foundation, INFORM ELECTRONIC has based its strategy on below main policies:

- Quality understanding for its products and services,
- Tailored solutions to specific customer needs,
- Customer satisfaction and happiness,
- After sales service and support
- Continuous improvement for operational excellence and advanced technology

Inform is an official ISO certified company. The company has also Gost, Soncap, and CE certifications. All the Inform products are designed and produced with the worldwide quality understanding, and ISO rules.

Inform is being acquired by Legrand Group in 2010. Legrand is global specialist in electrical and digital building infrastructures. The Group has direct presence in more than 70 countries and number of employee is more than 31,000 people.





# Key Competencies

Continuous investment on R&D and advanced technology Inform believes that only the companies developing new products, and investing on new technologies may survive and grow. Inform product range is backed up by research and development centre, and is changing to suit the customer's today and tomorrow needs. Inform is always developing and designing new products to meet the future challenge by rapidly integrating advanced technologies. Inform research and development team is built with experienced engineers and technicians specialist on their job. The company R&D team developed new generation of several UPS types controlled by Digital Signal Processor DSP. The new generation, DSP controlled single phase UPS gained two rewards; 'Technology Innovation and Creativity Reward 2000' and 'Biggest Technology Contribution Reward 2002. Three phase IGBT rectifier UPS gained 'Technology Innovation and Creativity Reward 2005'. Inform is one step ahead of the technology.

Apart from UPS Systems expertise, with the new investment, Inform focused on research and development on DC Power Supply field as well. Inform is offering latest technology DC Power Supply Systems of which the quality and technology is proven with many critical installations in GSM field.

Inform is ambitious and hard working to be the force behind his Partner's success. Inform works more and more to make his partners more successful.

## Integrated Production

Quality control

Different from the other UPS manufacturers, Inform is able to produce every single part of its products in its premises;

electronic boards, mechanical parts, plastic cases, cabling, transformers and many others. Final assembly and testing are done at Inform premises. This gives to Inform the ability to control the quality at every step of production. Inform controls the quality of every single part of the product in every step of production.

## Tailor Made solutions

If standard product features do not fulfill the customer needs, Inform designs can be adapted to a tailor-made specification due to its ability in manufacturing every single part of own products. Whether it is the voltage, frequency and electrical installation standards, Inform provides its customers complete solutions with the flexible production capability.

## Inform Machinery Park

The company has PCB assembling facility in an air-conditioned, specially prepared area for electro static sensible components.

In addition to its automatic assembling SMD lines, the company has manual assembling lines for big components like transformers, coils, and connectors. Quality is the key point for Inform. All the finished PCB is controlled by microscope and optic devices with laser. Inform Electronic has capacity of assembling 300 million components per year. Inform machinery park shows great variety of machines giving to the company flexibility of standard and special product manufacturing as well. Computer controlled CNC machines, plastic injection machines, fully automatic painting machine, cable machines, transformer machines are some of them.





### **Solution provider in power electronic field thanks to wide range of products**

From consumer to industrial and defense grade, from customized to standard, Inform's products display a great variety. Know-how, technology developer identity, integrated production, wide product portfolio and engineering skills help Inform to offer turnkey solutions.

Offering solutions where energy is needed, Inform is well equipped to deal with all type of engineering projects in accordance with customers' needs and technical requirements.

### **Presales support**

Inform distribution network has presence in 5 continents and offer solution to different problems. This enriches Inform's know-how and experience and all of them are shared with the partners. Technical Presales support is essential to analyse the requirements and offer the optimum solution.

### **Optimum balance between price and quality**

Inform offers the highest quality with the most competitive way. Inform customers never look for the alternative, they always know that if Inform offers that is the optimum solution.

### **Technical Service Structure & 7x24 technical support**

After sales service is crucial for customer satisfaction and loyalty. So requirements must be sorted out as soon as possible. Inform gives the priority to technical training programs at the early stages of the cooperation with its partners. Private and general technical training programs

are organized for the partners in order to make them expert in Inform product range. Seminars and conferences are available for specific periods for the partners. The call center and international technical support team is available 7x24. Inform provides the best solution in the shortest response time. Inform is there when you need.

### **Thinking Globally, Acting Locally**

Having presence everywhere in the world, Inform believes that every market has its own dynamics to be managed closely. So inform has close relation with its partners and supports them with local policies based on global experience

### **Uninterruptible Energy, Uninterruptible Support**

Drawing long experience in the power management field, the quality of its products, and the way to care of its customers are the proof of Inform development, and becoming worldwide brand. With a global vision and staying ahead of technology, Inform shall make every endeavour to keep its commitments to its staff, customers, sub-contractors and trade associates.

Its distribution network extends at five continents; from Europe to Asia, South America to Africa and Australia, demonstrating its adaptability to different markets and their conditions at around 85 countries. Inform became one of the leading companies and worldwide brand in its sector knowing that continuous success can be achieved by only satisfied happy customers with the understanding of 'Uninterruptible Energy, Uninterruptible Solution, Uninterruptible Support.

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## Guardian & Guardian LCD Series

Line Interactive Technology  
600VA to 2000VA

- ▶ Microprocessor controlled Line Interactive Technology
- ▶ Boost and Buck Automatic Voltage Regulation (AVR)
- ▶ LCD or LED Display Panel
- ▶ Advanced Battery Management (ABM)
- ▶ Input Frequency auto sensing ( 50/60 Hz )
- ▶ Auto restart after mains recovery
- ▶ Charging during switched off mode
- ▶ Short circuit and overload protection
- ▶ Cold Start Function
- ▶ USB Communication Interface and Remote Monitoring Software\*
- ▶ Modem/Phone line protection\*
- ▶ Compact size and user friendly operation

\*Available at AP models only



## Guardian & Guardian LCD Series Technical Specifications

MODEL	GUARDIAN 600A/ AP GUARDIAN LCD 600AP	GUARDIAN 800A/ AP GUARDIAN LCD 800AP	GUARDIAN 1000A/ AP GUARDIAN LCD 1000AP	GUARDIAN 1500A/ AP GUARDIAN LCD 1500AP	GUARDIAN 2000A/ AP GUARDIAN LCD 2000AP
Capacity (VA)	600	800	1000	1500	2000
INPUT					
Voltage	220V or 230V				
Input Voltage Range	162 to 290VAC				
Frequency	50 or 60 Hz (auto sensing)				
OUTPUT					
Power Factor	0.6				
Voltage (On battery)	220V or 230V ±10%				
Waveform (On battery)	Simulated Sinewave				
Frequency (On battery)	50 or 60 Hz ± 1Hz				
Voltage Regulation (AVR)	AVR automatically increases output voltage 15% above input voltage if -10% to -26% of nominal AVR automatically decreases output voltage 15% below input voltage if +10% to +22% of nominal				
Transfer Time	2 - 6 ms				
Outlets	1 pc Schuko & 1 pc IEC C13		2 pcs Schuko & 2 pcs IEC C13		
BATTERY					
Type	Maintenance-free lead acid batteries				
Recharge Time	6 hours ( to 90% of full capacity)				
Voltage	12VDC		24VDC		
Quantity	1x12V 7Ah	1x12V 9Ah	2x12V 7Ah	2x12V 9Ah	
DISPLAY					
LED Display	Fault, Battery Mode, AC Mode				
LCD Display (optional)	Input & Output Voltage values, AC mode / Load Level / Battery Capacity Indicators				
PROTECTION					
	Short Circuit, Overload, Battery Discharge, Overcharge, Tel / Phoneline (AP Models only )				
COMMUNICATION					
Interface (Communication Ports)	USB Port (only AP models)				
Software	Available with AP models only				
AUDIBLE ALARMS					
	Backup Mode, Low Battery, Overload, Fault				
ENVIRONMENT					
Operating Temperature	0-40 °C				
Humidity	0 to 90% non-condensing				
Audible Noise at 1m	<40dBA				
Protection class	IP20				
PHYSICAL SPECIFICATIONS					
Net Weight (kg)	4,35	4,7	7,8	10,1	10,5
Dimensions (mm) WxDxH	101x298x142		149,3x353x162	158x380x198	
STANDARDS					
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC)				

# Informer Compact Series

Line Interactive Technology with sinewave output  
1000VA/2000VA/3000VA

- ▶ Pure Sinewave Output for any critical load
- ▶ User Friendly LCD Display
- ▶ Boost and buck Automatic Voltage Regulation
- ▶ 97% High Efficiency in Normal Mode
- ▶ Communication Port and Remote Monitoring Software
- ▶ Overload and Short Circuit Protection
- ▶ Advanced Battery Management
- ▶ Discharge Protection
- ▶ Fault Alarms and State Warnings
- ▶ Cold Start Function
- ▶ Compact size, light weight and low noise



## Informer Compact Series Technical Specifications

MODEL	INF-C1000		INF-C2000		INF-C3000	
Capacity (VA)	1000		2000		3000	
INPUT						
Voltage	220/230/240VAC ± 25% (adjustable from DIP switches on ups)					
Frequency	50 or 60Hz ± 5%					
OUTPUT						
Power Factor	0.6					
Voltage(on mains)	220/230/240VAC ± 12%					
Voltage(on battery)	220/230/240VAC +3% -10%					
Wave Form	Sine Wave, THD < 3 %					
Frequency(on battery)	50 or 60 Hz ± 0.5%					
Voltage Regulation (AVR)	AVR automatically increase output voltage 15% above input voltage if -9% to 25% of nominal. AVR decrease output voltage 15% below input voltage if +9% to +25% of nominal					
Transfer Time	4 ms.					
Overload	UPS automatically shuts down if overload exceeds 110% of nominal at 10min. (AC Mode) and if overload exceeds 100% of nominal at 10sec. (Battery model)					
Outlets	2 pcs Schuko & 3 pcs IEC C13					
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time	2 to 4 hours to 90%					
Voltage	24Vdc		48Vdc			
Quantity	2x12V 7Ah		4x12V 7Ah		4x12V 9Ah	
Protection	Automatic self-test & discharge protection, replace battery indicator					
DISPLAY						
LED Display	Utility Normal, Backup, UPS Fault and Battery condition					
LCD Display	Load Level, Battery Level, Bypass, AVR, Battery Low-Replace-Fault, UPS Fault, Overload					
ALARMS						
Alarms	Line Failure, Battery Low, Overload and Fault					
PROTECTION						
	Spike Protection (320 joule, 2 ms), overload protection, short circuit protection					
COMMUNICATION						
Interface (Communication Ports)	RS232 Standard					
Software	Standard					
ENVIRONMENT						
Operating Temperature	0-40 °C					
Humidity	0 to 90% non-condensing					
Audible Noise at 1m	< 40 dBA		< 45 dBA			
Protection Class	IP20					
PHYSICAL SPECIFICATIONS						
Net Weight (kg)	15.5		23		27	
Dimensions (mm) WxDxH	175x370x247		175x427x247			
STANDARDS						
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC)					



# Informer Series

Line Interactive Technology With Sinewave Output  
1000VA/2000VA/3000VA ( Tower & Rack Models )

- ▶ Pure sinewave output for any critical load
- ▶ High Battery Charging Capacity
- ▶ Extended back up time with battery pack
- ▶ Boost and buck Automatic Voltage Regulation
- ▶ Overload protection
- ▶ Short circuit protection
- ▶ Compact size, light weight&low noise
- ▶ Discharge protection
- ▶ Short recharge time
- ▶ Fault alarms and State Warnings
- ▶ Communication Port and Remote Monitoring Software
- ▶ Rack Version available



## Informer Series Technical Specifications

MODEL	INF 1000			INF 2000		INF 3000	
Capacity (VA)	1000			2000		3000	
INPUT							
Voltage	220V / 230V ± 25%						
Frequency	50 or 60Hz ± 5%						
OUTPUT							
Power Factor	0.6						
Voltage (On battery)	220V / 230V ± 5%						
Wave Form	Pure Sinewave						
Frequency (On battery)	50 or 60 Hz ± 0.5%						
Voltage Regulation (AVR)	AVR automatically increase output voltage 15% above input voltage if -9% to 25% of nominal. AVR decrease output voltage 13% below input voltage if +9% to +25% of nominal						
Transfer Time	2/4 ms.						
Overload	UPS automatic shutdown if overload exceeds 110% of nominal at 20sec. and 125% at 2 sec.						
Outlets	2pcs Schuko OR 4pcs IEC C13						
BATTERY							
Type	Maintenance-free lead acid batteries						
Recharge Time (hour)	4	5	6	4	5	4	5
Voltage	24 VDC			48 VDC		48 VDC	
Quantity (internal battery)	2 x 12V 7Ah	2 x 12V 9Ah	2 x 12V 12Ah	4 x 12V 7Ah	4 x 12V 9Ah	4 x 12V 7Ah	4 x 12V 9Ah
Back up Time	4min	7min	10min	4min	7min	3min	5min
Protection	Automatic Self-Test & Discharge Protection, Replace Battery Indicator						
DISPLAY							
LED Display	Back up, Overload, replace battery indicators						
ALARM							
	Line Failure, Battery Low, Overload and Fault						
PROTECTION							
	Spike Protection (320 joule, 2 ms), overload protection, short circuit protection						
COMMUNICATION							
Interface (Communication Ports)	RS 232 Standard						
Software	Standard						
ENVIRONMENT							
Operating Temperature	0-40 °C						
Humidity	0 to 90% non-condensing						
Audible Noise at 1m	< 40 dBA			< 45 dBA			
Protection Class	IP20						
PHYSICAL SPECIFICATIONS							
Tower Type							
Net Weight (kg)	19	20,5	22	28	30	32	34
Dimension (mm)	135x430x390			135x470x390			
19" Rack Mount Type							
Dimension (WxDxH) mm	483x450x132			483x512x132			
STANDARDS							
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC)						



# Informer Double Series

Uninterruptible Power Supply  
Line Interactive Technology with Sinewave Output  
2000VA/3000VA Double Model

- ▶ Pure sinewave output for any critical load
- ▶ High Battery Charging Capacity
- ▶ Extended back up time with internal battery
- ▶ Boost and buck Automatic Voltage Regulation
- ▶ Overload protection
- ▶ Short circuit protection
- ▶ Compact size & low noise
- ▶ Discharge protection
- ▶ Short recharge time
- ▶ Fault alarms and State Warnings
- ▶ Communication Port and Remote Monitoring Software



## Informer Double Series Ups Technical Specifications

MODEL	Informer 2000 Double M	Informer 2000 Double L	Informer 2000 Double XL	Informer 3000 Double M	Informer 3000 Double L	Informer 3000 Double XL
Capacity	2000 VA			3000 VA		
INPUT						
Voltage	220V / 230V ± 25%					
Frequency	50 or 60Hz ± 5%					
OUTPUT						
Power Factor	0,6					
Voltage (On battery)	Pure Sinewave, 220V, 230V ± 5%					
Frequency (On battery)	50 or 60 Hz ± 0.5%					
Voltage Regulation (AVR)	AVR automatically increase output voltage 15% above input voltage if -9% to 25% of nominal. AVR decrease output voltage 13% below input voltage if +9% to +25% of nominal					
Transfer Time	2/4 ms.					
PROTECTION						
Surge Protection	320 joule, 2 ms.					
Overload	100% - 110%: 60 seconds 110% - 125%: 3 seconds >125%: Shutdown					
Short Circuit Protection	Fuse protection					
COMMUNICATION						
Interface (Communication Ports)	RS 232 Standard					
Software	Standard					
BATTERY						
Type	Maintenance-free lead acid batteries					
Quantity	4x 12V / 65Ah	4x 12V / 80Ah	4x 12V / 100Ah	4x 12V / 65Ah	4x 12V / 80Ah	4x 12V / 100Ah
Recharge Time (Hour)	6	8	10	6	8	10
Protection	Automatic Self-Test & Discharge Protection, Replace Battery Indicator					
Back up Time (Full / Half Load) min.	80 / 200	100 / 320	140 / 380	50 / 120	60 / 140	80 / 200
PHYSICAL SPECIFICATION						
Net Weight (without battery) (kg)	54	54	54	54	54	54
Dimensions (mm) WxDxH	385 x 456 x 904					
ENVIRONMENT						
Operating Temperature	0-40 °C					
Humidity	0 to 90% non-condensing					
Audible Noise at 1m	< 40 dBA					
Protection Class	IP20					
STANDARTS						
Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC)					

# Sinus Series

On – Line “Double Conversion” Technology  
1 phase in-1 phase out  
1kVA to 3kVA

- ▶ Microprocessor Controlled Online Double Conversion Technology
- ▶ Pure sinewave output less than 3% THD
- ▶ Wide input voltage range  $\pm 27\%$  of nominal
- ▶ Smart RS-232 communication port
- ▶ Internal SNMP Slot Card Option
- ▶ Management software compatible
- ▶ Input Power Factor Correction PFC (  $>0.98$  )
- ▶ Overload & short circuit protection
- ▶ Cold start (DC power on)
- ▶ Genius battery management (GBM)
- ▶ Compact size, light weight & low noise
- ▶ Rack version available



## Sinus Series Technical Specifications

MODEL	SS 210		SS 220	SS 230
Capacity (kVA)	1		2	3
INPUT				
Voltage	160VAC - 280VAC			
Frequency	50/60 Hz ±5%			
Power Factor	>98%			
OUTPUT				
Output Power Factor	0,7			
Voltage	220VAC / 230 / 240VAC			
Voltage Regulation	±%2			
Frequency	50/60 Hz (Auto detection)			
Frequency Regulation	± 0,5%			
Harmonic Distortion	<3% ( for linear loads )			
Crest Factor	3:1			
Output Waveform	Sinusoidal			
Overload Capacity	100%-120% for 60 seconds, 120%-150% for 10 seconds			
Whole efficiency	up to 88%			
Inverter efficiency	±>90%			
Transfer Time	0ms			
Outlets	3pcs IEC C13 & 1pc Schuko Outlets	3pcs IEC C13 & 2pcs Schuko Outlets	6pcs IEC C13 & 2pcs Schuko Outlets	
BATTERY				
Type	Maintenance-free lead acid batteries			
Recharge Time	8 hours(to 90% of full capacity)			
Voltage	36VDC	72VDC	96VDC	
Internal Battery	3 pcs 12V 7Ah	6 pcs 12V 7Ah	8 pcs 12V 7Ah	
Back Up Time	Full Load	6 min	5 min	
	Half Load	15 min	12 min	
DISPLAY				
LED Display	Utility, Inverter, Bypass Mode, Fault, Overload, Battery Low, Self-test, Load/Battery Level			
ALARMS				
	Line Failure, Battery Low, Transfer to Bypass, Failure Events			
PROTECTION				
	short circuit, over temperature, overload, high voltage, battery low			
COMMUNICATION				
Interface (Communication Ports)	RS-232 Standard			
Monitoring and Management Software	Standard			
ENVIRONMENT				
Temperature	0°C - 40°C			
Humidity	0% - 95%			
Noise Level (1m Distance)	<45dBA			
Protection Class	IP20			
PHYSICAL SPECIFICATIONS				
Tower Type				
Net Weight (kg)	15	29	35	
Dimensions (mm) WxDxH	147x401x223	130x475x360	190x450x360	
19" Rack Mount Type				
Net Weight (kg)	16	28	37	
Dimensions (mm) WxDxH	483x390x88	483x485x130	483x460x192	
STANDARDS				
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC)			
ACCESORIES				
Optional	Internal&External SNMP, Dry Contact Board, USB Board, Internal Additional Charger for External Batteries, External Manual Bypass Panel			

# Sinus Premium & Premium LCD Series

On-Line "Double Conversion" Technology

1 phase in-1 phase out

1kVA to 3kVA

- Online double conversion technology
- Input power factor correction PFC (>0,99)
- High output power factor (PF : 0.9)
- Pure sinewave output less than 3% THD
- Wide input voltage / Frequency range
- Smart RS-232 communication port
- Internal SNMP Slot Card Option
- Management software compatible
- Overload & short circuit protection
- Cold start (DC power on)
- Smart battery management
- Compact size, light weight & low noise



## Sinus Premium & Premium LCD Series Technical Specifications

MODEL	SPS 210 SPS LCD 210		SPS 220 SPS LCD 220		SPS 230 SPS LCD 230	
Power (kVA)	1		2		3	
INPUT						
Voltage Range	160VAC ~ 300VAC (@ 0% to 78% Load)					
	185VAC ~ 260VAC (@ 78% to 89% Load)					
	210VAC ~ 240VAC (@ 89% to 100% Load)					
Frequency	45Hz ~ 65Hz					
Power Factor	≥0.99 (@full linear load)					
OUTPUT						
Output Power Factor	0.9					
Voltage	220V / 230V / 240VAC					
Voltage Regulation	<±1% (till low battery warning signal)					
Frequency (Synchronized range)	3Hz or 1Hz (selectable)					
Frequency (Battery Mode)	50 / 60Hz±0.1%					
Harmonic Distortion	<3% (@full linear load), <6% (@full non-linear load)					
Crest Factor	3:1					
Output Waveform	Sinusoidal					
Overload Capacity	100%-105% : Continuous					
	106%-120% for 30 seconds					
	121%-150% for 10 seconds					
	>150% : Transfer to Bypass					
Line Mode efficiency	±>86%		±>87%		±>88%	
Battery Mode efficiency	±>85%		±>86%		±>87%	
Transfer Time (AC to DC)	0ms					
Outlets	3pcs IEC C13 & 1pc Schuko		3pcs IEC C13 & 2pcs Schuko		6pcs IEC C13 & 2pcs Schuko	
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time	5 hours (to 80% of full capacity)					
Voltage	24VDC		48VDC		72VDC	
Internal Battery	2pcs 12V 7Ah		4 pcs 12V 7Ah		6 pcs 12V 9Ah	
Cold Start	YES					
DISPLAY						
LED Display	Normal Mode, Battery Mode, Bypass Mode, Self-Test, Weak-Bad Batery, Site Wiring Fault, Fault, Overload, Load/Battery Level					
LCD Display (Optional)	Input/Output/Bypass Voltage, Input/Output/Bypass Frequency, Load%, Battery Voltage, Internal Temperature					
ALARMS						
	Battery Mode, Battery Low, Overload, Failure Events					
PROTECTION						
Short Circuit	Bypass Mode: Fuse, Normal Mode: Output Breaker / Electronic Circuit, Battery Mode: Output Breaker / Electronic Circuit					
Battery	Battery Discharge Management					
EPO	UPS shuts down immediately					
Over Temperature	Normal Mode: Transfers to Bypass Mode, Battery Mode: UPS shuts down immediately					
COMMUNICATION						
Interface (Communication Ports)	RS-232 Standard, Optional USB					
Monitoring and Management Software	Standard					
Options	Dry Contact Board, USB Board, SNMP Card					
ENVIRONMENT						
Temparature	0°C - 40°C					
Humidity	0% - 90% (without condensation)					
Noise Level (1m Distance)	<50dBA					
Protection Class	IP20					
PHYSICAL SPECIFICATIONS						
Net Weight (kg)	12		22		27	
Dimensions (mm) WxDxH	144x360x220		152x438x322		190x438x322	
STANDARDS						
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC)					
ACCESORIES						
Optional	Internal&External SNMP, Dry Contact Board, Additional Charging Board					

# Sinus LCD Series

On-Line "Double Conversion" Technology  
1 phase in-1 phase out  
1kVA to 3kVA (Tower & Rack Convertible)

- ▶ On-line 'double conversion' technology
- ▶ Real Digital Signal Processor (DSP) Controller
- ▶ Power factor correction PFC (>0,99)
- ▶ User friendly LCD display
- ▶ Programmable Receptacles
- ▶ Wide input voltage range and frequency
- ▶ Availability to configure as 50/60Hz Frequency Converter from LCD Panel
- ▶ Smart communication port and SNMP management capability
- ▶ Hot Swappable Battery
- ▶ Emergency shutdown control through EPO
- ▶ Overload & short circuit protection
- ▶ Powerful Built-in Charger
- ▶ Extended back up time with battery cabinet
- ▶ Cold start (DC power on)
- ▶ Genius battery management (GBM)
- ▶ RS232, USB and SNMP can be activated simultaneously
- ▶ Compact size, light weight & low noise



## Sinus LCD Series Technical Specifications

MODEL	SS LCD 210		SS LCD 220		SS LCD 230	
Power(kVA)	1		2		3	
INPUT						
Voltage	160VAC - 288VAC					
Frequency	50/60 Hz ± 5% (Auto Sensing)					
Power Factor	>99%					
OUTPUT						
Power Factor	0.8					
Voltage	220VAC / 230 / 240VAC					
Voltage Regulation	±1%					
Frequency	50/60 Hz					
Frequency Regulation	± 0.1%					
Harmonic Distortion	<3%					
Crest Factor	3:1					
Output Waveform	Sinusoidal					
Overload Capacity	100%-120% for 30 seconds					
	120%-150% for 10seconds					
Whole efficiency	>85%				>88%	
Transfer Time	0ms					
Outlets	6pcs IEC C13 or 2pcs Schuko				4pcs IEC C13 or 2pcs Schuko	
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time	3 hours (to 90% of full capacity)					
Voltage	36VDC		72VDC			
Internal Battery	3pcs 12V 7Ah		6pcs 12V 7Ah		6pcs 12V 9Ah	
Built in max. Charge Current	1.8A		2.1A		2.7A	
Back Up Time	Full Load		5 min		4 min	
	Half Load		12 min		10 min	
Cold Start	YES					
DISPLAY						
LED Display	Utility or Bypass, Battery Low, Battery Abnormal, Overload, Site Wiring Fault, Service Mode, UPS Off, UPS Abnormal					
LCD Display	Input /Output Voltage and Frequency Values, Load%, Battery Voltage, Internal Temperature					
ALARMS						
	Line Failure, Battery Low, Over Load, Failure Events					
PROTECTIONS						
	Short circuit, over temperature, overload, high voltage, battery low, EPO					
COMMUNICATION						
Interface	RS232 and USB					
Monitoring and Management Software	Standard					
ENVIRONMENT						
Temparature	0°C - 40°C					
Humidity	0% - 90% (without condensation)					
Noise Level(1m distance)	<50dBA (at 1 meter)					
Protection Class	IP 20					
PHYSICAL						
Net Weight (kg)	16		29.5		30	
Dimensions (mm) WxDxH	440x88x450		440x88x650		440x88x650	
STANDARDS						
	EN 62040-1-1 (safety), EN 62040-2(EMC)					
ACCESSORIES						
Optional	Internal&External SNMP, Dry Contact Board, External Manual Bypass, Rail Kit, External Battery Connection Cable					



# DSP Multipower Convertible Series

On-Line "Double Conversion" Technology  
1 Phase in / 1 Phase out 5kVA to 10kVA,  
3 Phase in / 1 Phase out 10kVA to 20 kVA  
(Tower & Rack Convertible)

- ▶ On-line 'double conversion' technology
- ▶ Real Digital Signal Processor ( DSP ) Controller
- ▶ Parallel redundant operation up to 4 units
- ▶ Input Power Factor Correction PFC
- ▶ High output power factor ( PF : 0.9 )
- ▶ Low total harmonic distortion (THD) level
- ▶ Convertible display helps to use both for tower and rack applications
- ▶ Transformerless Design
- ▶ Availability to configure as 50/60Hz Frequency Converter from LCD Panel
- ▶ High Performance with the PWM Sinewave Topology
- ▶ Cold Start Function
- ▶ Intelligent Battery Management System extends the life time of batteries
- ▶ Overload, Overheat & Short Circuit Protections
- ▶ User Friendly Multi-Functional LED/LCD Display Panel
- ▶ Energy Saving Mode ( ECOMODE )
- ▶ Smart Fan Speed Regulation with temperature controlled
- ▶ RS232 Communication Port & Management Software
- ▶ Internal SNMP, DRY contact, RS485 card options



(Ups Looking Battery Cabinet)

## DSP Multipower Convertible Series Technical Specifications

MODEL	DSPMP-1105	DSPMP-1106	DSPMP-1110	DSPMP-3110	DSPMP-3115	DSPMP-3120
Power (rVA)	5	6	10	10	15	20
Power (kW)	4.5	5.4	9	9	13.5	18
INPUT						
Phase Configuration	1Ph + N + PE (Hardwire)			3Ph + N + PE (Hardwire)		
Nominal Voltage	220VAC/230VAC/240VAC			380VAC/400VAC/415VAC		
Minimum Voltage (at Half load)	160VAC			277VAC		
Minimum Voltage (at Full load)	180VAC			312VAC		
Maximum Voltage	280VAC			485VAC		
Frequency				45-65 Hz		
Power Factor	0.99			0.95		
OUTPUT						
Power Factor				0.9		
Phase Configuration				1Ph + N + PE (Hardwire)		
Nominal Voltage				220VAC / 230VAC / 240VAC		
Wave Form				Pure Sine Wave		
Total Harmonic Distortion at 100% linear load				<3%		
at 100% non-linear load				<5%		
Frequency				50Hz or 60Hz (adjustable)		
Frequency Tolerance(free running)				±0.1 %		
Frequency Synchronized Range				±1Hz; ±3Hz (selectable)		
Static Voltage Regulation (0%-100% load)				<1%		
Crest Factor				3		
Transfer Time				0sec		
Overload				Up to 10min. @100%-120% Up to 1min. @120%-150% Transfer to bypass @ >150%		
Total Efficiency	up to 90%		up to 91%		up to 93%	
Greenmode efficiency			≥97%			
Outlets	External Socket Box (2 pcs SCHUKO, 4 pcs IEC C13 Outlets) Optional					
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time	4-6h up to 90%					
Voltage	240VDC				192VDC for 16 pcs 240VDC for 20 pcs	
Quantity per string	20 pcs 12V Batteries				(20 pcs 12V Batteries) or (16 pcs 12V Batteries)**	
Internal batteries	20 pcs 12V 45Ah (internal battery version only)			N/A		
Built in max. Charge Current	1.6A			4A		
Cold Start	Present					
DISPLAY						
LED + LCD Display	Line Mode, Backup Mode, ECO Mode, Bypass Supply, Battery Low, Battery Bad/Disconnect, Overload and Transferring with Interruption & UPS Fault					
LCD display	Input Voltage, Input Frequency, Output Voltage, Output Current, Output Frequency, Load Percentage, Battery Voltage & Inner Temperature					
Self Diagnostics	Upon Power-on, Front Panel Setting & Software Control, 24-hour routine checking					
Audible and Visual Alarms	Line Failure, Battery Low, Transfer to Bypass, System Fault Conditions					
PROTECTION						
Overload Protection	Bypass transfer time is calculated by simulating a temperature related model of a fuse					
Short Circuit Protection	Acts as the ideal current source during the short circuit time					
Other Protection	Against excessive (heat,voltage,current) intense battery discharge					
COMMUNICATION						
Interface (Communication ports)	Standard RS232 port and optional RS485, Internal SNMP, Dry Contact Cards					
Monitoring and Management Software	Standard					
ENVIRONMENT						
Operating Temperature	0 °C ~ + 40 °C					
Proposed Temp. to extend battery life	20 - 25 °C					
Humidity	up to 90% ( non-condensing )					
Audible Noise at 1 m	<50 dB				<60 dB	
Protection Class	IP 20					
PHYSICAL SPECIFICATIONS (tower position)						
Net Weight ( power module)	25kg		26kg	28kg	36 kg	
Net Weight (with internal batteries)	55kg		-		-	
Dimensions(mm) (HxWxD)-power module	440x88x680		440x132x680		440x220x720	
Dimensions(mm) (HxWxD)- w/battery vers.	440x176x680		-		-	
STANDARDS						
Standards	EN62040-1-1 (safety); EN62040-2 (EMC);EN62040-3(performance); EN60950-1					
ACCESSORIES						
Optional	Internal&External SNMP, Dry Contact Board, External Manual Bypass, Rail Kit, External Battery Connection Cable, External Socket Box, External Additional Charging Board					
** Availability up to 16 pcs 12V batteries per string if load is less than 95%						

\*\* Availability to use 16pcs 12V batteries per string if load is less than 85%

# DSP Multipower Series

Online Double Conversion Technology  
3Phase in / 1Phase out – 15kVA & 20kVA

- ▶ On-Line Double Conversion Technology
- ▶ Real Digital Signal Processor (DSP) Controller
- ▶ Paralel redundant operation up to 4 units
- ▶ Increased Input Power Factor (0,95)
- ▶ Transformerless Design
- ▶ Cold Start Function
- ▶ Overload, Overheat & Short Circuit Protections
- ▶ User Friendly Multi-Functional LED/LCD Display Panel
- ▶ Energy Saving Mode (GREEN MODE)
- ▶ Intelligent Battery Management System
- ▶ RS232 Communication Port & Management Software
- ▶ SNMP, Dry Contact, RS485, USB Card options



## DSP Multipower Series Technical Specifications

MODEL	DSPMP-3115T	DSPMP-3120T
Power (kVA)	15	20
Power (kW)	13,5	18
INPUT		
Phase Configuration	3Ph + N + PE (Hardwire)	
Nominal Voltage	380VAC/400VAC /415VAC	
Minimum Voltage (at 75% Load)	277VAC	
Maximum Voltage	485VAC	
Frequency	45-65 Hz	
Power Factor (@linear load)	0,95	
OUTPUT		
Power Factor	0,9	
Phase Configuration	1Ph + N + PE (Hardwire)	
Nominal Voltage	220VAC/230VAC/240VAC	
Wave Form	Pure Sine Wave	
Total Harmonic Distortion at 0 to 100% linear load	<3%	
Frequency	50Hz or 60Hz (adjustable)	
Frequency Tolerance (free running)	±0,2%	
Frequency Synchronized Range	±1Hz or ±3Hz ( selectable )	
Voltage Regulation	±2%	
Crest Factor	3	
Transfer Time	0sec	
Total Efficiency	> 91%	
Greenmode Efficiency	> 95%	
BATTERY		
Type	Maintenance-free lead acid batteries	
Voltage	240VDC	
Quantity per string	20pcs 12V Batteries	
Built in max. Charge Current	4A	
DISPLAY		
LED + LCD Display	Line Mode, Backup Mode, ECO Mode, Bypass Supply, Battery Low, Battery Bad/Disconnect, Overload and Transferring with Interruption & UPS Fault	
LCD display	Input Voltage, Input Frequency, Output Voltage, Output Current, Output Frequency, Load Percentage, Battery Voltage & Inner Temperature.	
Self Diagnostics	Upon Power-on, Front Panel Setting & Software Control, 24-hour routine checking	
Audible and Visual Alarms	Line Failure, Battery Low, Transfer to Bypass, System Fault Conditions	
COMMUNICATION		
Interface (Communication ports)	Standard RS232 port and optional RS485, Internal SNMP, Dry Contact Cards	
Monitoring and Management Software	Standard	
ENVIRONMENT		
Operating Temperature	0 °C - 40 °C	
Proposed Temp. to extend battery life	20 - 25 °C	
Humidity	up to 90% (non-condensing)	
Audible Noise at 1 m	<60 dB	
Protection Class	IP 20	
PHYSICAL SPECIFICATIONS		
Net Weight	60kg	62kg
Dimensions (mm) (HxWxD)	290x650x770	
STANDARDS		
Standards	EN62040-1-1 (Safety); EN62040-2 (EMC); EN62040-3 (Performance); EN60950-1	
ACCESSORIES		
Optional	Internal&External SNMP, Dry Contact Board, External Manual Bypass, External Battery Connection Cable, External Additional Charging Board	

## Saver Plus DSP Series

On-Line "Double Conversion" Technology  
3Phase in / 1Phase out - 15kVA to 20kVA

- On-line 'double conversion' technology
- Real Digital Signal Processor (DSP) controlled, IGBT technology
- Wide input voltage range (140V-480V)
- Input Power Factor Correction PFC (>0,97)
- Intelligent Battery Management System extends the life time of batteries
- Transformerless Design
- Small Dimensions
- Artificial intelligence algorithms to improve reliability and technical performance
- Manual Bypass
- LCD display
- RS 232 and relay interface
- Management and monitoring software available for all operating systems and SNMP support



## Saver Plus DSP Series Technical Specifications

MODEL	SD3115	SD3120
Power	15kVA	20kVA
INPUT		
Nominal Voltage	380 V / 400V / 415V 3Phase, N	
Minimum Voltage	140V 3Phase, N	
Minimum Voltage (at full load)	260V 3Phase, N	
Maximum Voltage	480V 3Phase, N	
Frequency	50 - 60Hz (45 to 65 Hz)	
Nominal Current	17,4 A / phase	23,3 A / phase
Maximum Current	53 A peak / phase	71 A peak / phase
Power Factor	>0,97	
OUTPUT		
Power Factor	0,7	
Nominal Voltage	220V / 230V (adjustable)	
Wave Form	Sinus	
Total Harmonic Distortion	< 3%	
Frequency	50Hz or 60Hz (adjustable)	
Voltage Regulation (Static)	1%	
Crest Factor	3	
Overload	> 30s (at 150 % load)	
Total Efficiency	> 91%	
BATTERY		
Type	Maintenance-free lead acid batteries	
Quantity per string	32pcs 12V Batteries	
Voltage	384VDC	
Recharge Time for Internal Batteries	< 4 h	
Discharge Current Wave	< 10%	
Internal Batteries (Optional)	12Ah	
Warning	Audible Buzzer through the end of Battery Discharge	
DISPLAY		
LED Panel	Line, Bypass, Battery, Inverter, Overload, Fault Indicators	
LCD Panel	Load%, Battery Temperature, Input&Output&Battery Voltages, Output Frequency	
STATIC BY-PASS		
Voltage Tolerance	10% (adjustable)	
Frequency Tolerance	3Hz (adjustable)	
Transfer Time	0 ms	
PROTECTION		
Protections	Overload Protection, Short Circuit Protection, High Temperature, Over Voltage, Over Current	
COMMUNICATION INTERFACE		
Interface (Communication Ports)	RS 232	
Dry Contact Signals	Ups shutdown, mains failure, low battery, by-pass active, summary alarm	
ENVIRONMENT		
Temperature	0 - 40 °C	
Suggested Temp. to extend battery life	20 - 25 °C	
Humidity	< 95%	
Audible Noise (from 1m distance)	< 55 dB	
Protection Class	IP 20	
PHYSICAL SPECIFICATIONS		
Net Weight - without battery (kg)	125	130
Dimensions (mm) (WxDxH)	270x730x780	430x820x970
STANDARDS		
Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC)	
ACCESORIES		
Optional	External SNMP, Monitoring and Management Software, Remote Monitoring Panel, Additional Charging Set, Internal Galvanic Isolation Transformer	

## DSP Flexipower Series

On-Line "Double Conversion" Technology  
1Phase in / 1Phase out 3kVA to 10kVA  
3Phase in / 1Phase out 10kVA

- ▶ On-Line Double Conversion Technology
- ▶ Real Digital Signal Processor ( DSP ) Controller
- ▶ Power Factor Correction
- ▶ High output power factor
- ▶ Parallel redundant operation up to 4 units (excluding 3k)
- ▶ Low total harmonic distortion (THD) level
- ▶ Transformerless Design
- ▶ High Performance with the PWM Sinewave Topology
- ▶ Cold Start Function
- ▶ Intelligent Battery Management System extends the life time of batteries
- ▶ Overload, Overheat & Short Circuit Protections
- ▶ Emergency Shutdown Control through EPO
- ▶ User Friendly Multi-Functional LED/LCD Display Panel
- ▶ Energy Saving Mode (ECOMODE)
- ▶ RS232 Communication Port & Management Software
- ▶ Internal SNMP, Dry contact and RS485 card options
- ▶ Extended Back up time with External Battery Cabinet





## DSP Flexipower Series Technical Specifications

MODEL	FP1103	FP1105	FP1106	FP1108	FP1110	FP3110
Power (kVA)	3	5	6	8	10	10
Power (kW)	2,4	4,5	5,4	7,2	9	9
INPUT						
Phase Configuration	1Ph + N + PE					3Ph + N + PE
Nominal Voltage	220V/230/240V					380V/400V/415V
Minimum Voltage	160 V	180 V				320 V
Maximum Voltage	288 V	280 V				485 V
Frequency	± 5 Hz	45 - 65 Hz				
Power Factor	0,99					
OUTPUT						
Power Factor	0,8	0,9				
Phase Configuration	1Ph + N + PE					
Nominal Voltage	220V / 230 / 240V (adjustable)					
Wave Form	Pure Sine Wave					
Total Harmonic Distortion at 100% linear load	<3%					
Frequency	50Hz or 60Hz (adjustable)					
Frequency Tolerance (free running)	±0,2 %					
Static Voltage Regulation (0%-100% load)	<1%					
Crest Factor	3:1					
Transfer Time	0 sec					
Overload	30 sec @ (%106-%120)	2min @ (%100-%120)				
	10 sec @ (%120-%150)	30sec @ (%120-%150)				
	Transfers to Bypass @%150					
Total Efficiency	≥90%	≥92%				
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time (for Internal Battery)	4-6h up to 90%					
Quantity per String	6pcs 12V Batteries	20 pcs 12V Batteries				
Voltage	72 VDC	240VDC				
Internal Batteries (Optional)	7Ah, 9Ah					
Cold Start	Present					
DISPLAY						
LED + LCD Display	Line Mode, Back up Mode, Eco Mode, Bypass Supply, Battery Low, Battery Bad/Disconnect, Overload, UPS Fault, Interruption during transfer					
LCD display	Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load%, Battery Voltage, Internal Temperature					
Self Diagnostics	Upon Power On, Front Panel Setting and Through Software Control, 24h routine Check					
PROTECTION						
Overload Protection	Bypass transfer time is calculated by simulating a temperature related model of a fuse					
Short Circuit Protection	Acts as the ideal current source during the short circuit time					
Other Protection	Against excessive (heat, voltage, current) intense battery discharge					
COMMUNICATION						
Interface (Communication ports)	Standard RS232 port and optional RS485, Internal SNMP, Dry Contact Cards					
ENVIRONMENT						
Operating Temperature	0 °C... + 40°C					
Proposed Temp. to extend battery life	20 - 25 °C					
Humidity	up to 90% (non-condensing)					
Audible Noise at 1 m	<50 dB					<52 dB
Protection Class	IP 20					
PHYSICAL SPECIFICATIONS						
Dimensions(mm) (HxWxD)	449x226x454	585x254x710				
Weight - without battery ( kg )	19	30	38		45	
STANDARDS						
Standards	EN62040-1-1 (Safety); EN62040-2 (EMC)					
ACCESSORIES						
Optional	Internal&External SNMP, Dry Contact Board, Monitoring and Management Software, Internal Battery Holder Apparatus, Additional Charging Set					

# Green Triera Series

On-Line Double Conversion "3Level Inverter" Technology

1 Phase in / 1 Phase out 3 kVA to 10kVA

3 Phase in / 1 Phase out 10kVA

- ▶ On-line Double conversion "3Level Inverter" Technology
- ▶ Real Digital Signal Processor (DSP) controlled IGBT Technology
- ▶ High AC-AC Efficiency ( 94% )
- ▶ High Output power factor ( 0.9 )
- ▶ Increased Input Power Factor ( p.f. > 0,99 )
- ▶ Low Input Current THD ( <6% )
- ▶ Low Output Voltage THD ( <1.5% )
- ▶ Wide input voltage range ( 90 V - 270 V )
- ▶ Cold Start & Soft Start Features,
- ▶ Availability to start up from Mains without batteries,
- ▶ Intelligent battery management system extends the life time of batteries,
- ▶ Transformerless Design, Compact dimensions,
- ▶ Smart fan speed regulation according to Temperature,
- ▶ Multi-Functional LCD display ( availability to adjust or calibrate the UPS, no need for software ),
- ▶ Advanced LCD Panel Menu ( availability to monitor 15 different parameters ),
- ▶ Event Log Display up to 500 Events,
- ▶ Availability to configure as 50/60Hz Frequency Converter from LCD Panel,
- ▶ Advanced communication possibility via RS232 ,
- ▶ Management and monitoring software available for all operating systems,
- ▶ SNMP, Modbus, USB Card, Dry Contact & EPO Card ( adjustable 5 relays ) Options,



## Green Triera Series Technical Specifications

MODEL	GTRI103	GTRI105	GTRI106	GTRI108	GTRI110	GTR3110
Power (kVA)	3	5	6	8	10	10
Power (kW)	2.7	4.5	5.4	7.2	9	9
INPUT						
Nominal Voltage	220V/230V/240V					380V/400V/415V
Minimum Voltage (at half load)	90V					155V
Minimum Voltage (at full load)	180V					320V
Maximum Voltage	270V					467V
Frequency	45-65 Hz					
Power Factor	>0,99					>0,95
Current Harmonics	< 6 %					< 25 %
OUTPUT						
Power factor	0.9					
Nominal Voltage	220VAC (factory set & adjustable from LCD panel with 1V steps from 208V to 242V)					
Voltage Tolerance	±1%					
Nominal Current (@220V	13,6A	23A	27A	36,4A	45,5A	45,5A
Wave Form	Pure Sine Wave					
Total Harmonic Distortion						
at 100% linear load	<1,5%					<2%
at 100% non-linear load	<3,5%					<4%
Frequency	50Hz or 60Hz (adjustable from LCD Panel)					
Frequency Tolerance(battery operation)	0,005 %					
Static Voltage Regulation (0%-100% load)	1%					
Dynamic Voltage Regulation (0%-100% load)	5%					
Crest Factor	3:1					
Overload						
100% to 125% overload	10 min					
125% to 150% overload	1 min					
Overall Efficiency (AC-AC)	94%					
Greenmode ( Ecomode ) Efficiency	> 98%					
BATTERY						
Type	Maintenance-free lead acid batteries					
Recharge Time	< 6h - 8 h					
Quantity per String	14pcs 12V Batt.	20pcs 12V Batteries				
Voltage	168VDC	240VDC				
Internal Batteries (Optional)	7Ah, 9Ah, 12Ah					
Warning	Audible Buzzer through the end of Battery Discharge					
Cold Start	Present					
DISPLAY PANEL						
LCD Panel	"Load %, Input/Output/Bypass Voltages, Output Power ( W & VA ), Output Current, Output p.f, Battery +/- Voltage Values, Input / Output Frequency, DC Bus +/- Voltages, Remaining Back Up Time, Internal Temperature, Heatsink Temperature"					
Event Log	500pcs (control availability in detail from LCD panel)					
Audible and Visual Alarm Warning	41 different Alarm Messages					
BY-PASS						
Voltage Tolerance	±10%					
Frequency Tolerance	3Hz (adjustable from LCD panel between 0.5Hz to 5Hz)					
Transfer Time	0 ms					
Overload Capability	up to 175%					
PROTECTION						
Overload Protection	Bypass transfer time is calculated by simulating a temperature related model of a fuse					
Short Circuit Protection	Acts as the ideal current source during the short circuit time					
Other Protection	Protection against excessive heat,voltage,current & Deep Discharge Protection					
COMMUNICATION						
Interface (Communication Ports)	RS232 (standard), SNMP, Modbus and USB (optional)					
Dry Contact Port ( Option )	5pcs from LCD Panel adjustable dry contact signals					
ENVIRONMENT						
Operating Temperature	0 °C.... + 40 °C					
Storage Temperature	-15 °C.....+55 °C					
Proposed Temp. to extend battery life	20 - 25 °C					
Humidity	< 95%					
Maximum Altitude	1000m					
Audible Noise ( from 1m distance )	<50 dB					<55 dB
Protection Class	IP 20					
PHYSICAL SPECIFICATIONS						
Net Weight (kg) (without battery)	32	33	34	43,5	44	47
Dimensions (mm) (WxDxH)	272 x 740 x 758					
STANDARDS						
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC), EN 62040-3(Performance)					
ACCESORIES						
Optional	Internal&External SNMP, Dry Contact Board, Monitoring and Management Software, Internal Battery Holder Apparatus, Additional External Charging Set					

# EVERESTtriaera

On-Line Double Conversion "3Level Inverter" Technology  
3 Phase in- 3 Phase out, 10 to 120 kVA

- ▶ On-line Double conversion "3Level Inverter" Technology
- ▶ High Output Power Factor ( 0.9 )
- ▶ High AC-AC Efficiency (  $\geq 95\%$  )
- ▶ Increased Input Power Factor ( p.f. > 0,99 )
- ▶ Low Input Current THD ( <5% )
- ▶ Low Output Voltage THD ( <2% )
- ▶ Wide input voltage range
- ▶ Static & Manual Bypass
- ▶ Soft Start Feature
- ▶ Generator Friendly Operation
- ▶ Parallel connection availability up to 8 units
- ▶ Intelligent battery management system extends the life time of batteries
- ▶ Transformerless Design, Compact dimensions
- ▶ Multi-Functional Graphical LCD Display Panel
- ▶ Event Log Display up to 380 Events
- ▶ Advanced communication possibility via RS232
- ▶ EPO ( Emergency Power Off ) -Management and monitoring software available for all operating systems
- ▶ Communication with computers and network systems through SNMP
- ▶ Low Installation and Operating Cost
- ▶ Expandable Battery Blocks





# EVEREST TRIERA Technical Specifications

MODEL (380-400-415V 3ph version)	ETR33010	ETR33015	ETR33020	ETR33030	ETR33040	ETR33060	ETR33080	ETR33100	ETR33120
Output power ( kva )	10	15	20	30	40	60	80	100	120
Nominal Active Power ( kW )	9	13,5	18	27	36	54	72	90	108
INPUT									
Number of phases	3Ph+N+PE								
Nominal Voltage ( Ph-Ph )	380V/400V/415V								
Voltage range (%100 load)	187V-270V Ph-N								
Voltage range (%50 load)	120V-270V Ph-N								
Nominal Frequency ( Hz )	50 or 60								
Frequency range for online operation	±10%								
Input Current THD	≤4% (*) ( **)								
Input Power Factor	0,99								
OUTPUT									
Power factor	0.9								
Number of phases	3Ph+N+PE								
Voltage ( 3ph_ Phase to Phase )	380V/400V/415V								
Static Voltage Regulation at %100 Linear Load ( online&battery mode )	<1%								
Voltage THD	Linear Load <2%, Nonlinear Load <3,5%								
Crest factor	3:1								
Frequency (Hz)	50 or 60								
Free Running Frequency (Hz)	± 0.01%								
Overload	125% for 10 minutes								
	150% for 1 minute								
Efficiency	up to 95%								
BATTERY									
Type	Maintenance-free lead acid batteries								
Quantity (pcs )	60 ( 2*30 )								
Battery Protection	Deep Discharge Protection with Auto Cut off								
Battery Test	Standard ( Automatic and Manual )								
DISPLAY									
TFT Display	Load%, Load kVA, Load kW, Input & Output Frequency, Voltage & Current, Bypass voltage, Battery Voltage & Current, Remaining Battery Time, Temperature, Alarms								
STATIC BYPASS									
Number of phases	3Ph+N+PE								
Voltage Range for bypass operation	± 10%								
Frequency Range for bypass operation (Hz)	± 6% ( Configurable )								
COMMUNICATION									
Interface (Communication Ports )	RS232 & RS422								
Dry Contact Signals	AC failure, Battery under voltage, bypass operation, output failure (Configurable from front panel)								
Others	EPO, Generator interface								
ENVIRONMENT									
Storage Temperature Range (°C )	-25 to +55 ( 15 to 40 recommended for longer battery life time )								
Operating Temperature Range (°C )	0 to 40 ( 20 to 25 recommended for longer battery life time )								
Relative Humidity Range	0-95% ( non-condensing )								
Maximum Altitude without derating (m)	1000								
Protection Level	IP20								
PHYSICAL SPECIFICATIONS									
Dimensions wxdxh (cm)	40 x 75 x 110				52 x 88 x 131		67x80x165		85x80x185
Weight (kg)	100	114	116	122	180	202	253	285	405
STANDARDS									
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC), EN 62040-3 (VFI-SS-III)								

(\*) for source having THDv < 2 % @ nominal load

(\*\*) varies depending on ups power

# Pyramid Dsp Series

On-Line "Double Conversion" Technology, DSP Controlled IGBT Rectifier UPS  
 3 phase in / 3phase out 10 to 300kVA (PDSP version)  
 3 phase in / 3phase out 5 to 150kVA (PDSP-U version)

- ▶ IGBT Rectifier
- ▶ Real Digital Signal Processor (DSP) controlled transformerless design
- ▶ Input Power Factor Correction PFC(>0,9)
- ▶ Low Total Harmonic Distortion Level (THDi ≤ 4%)
- ▶ High Efficiency (up to 94%)
- ▶ Wide Input Voltage Range
- ▶ Generator Compatible Operation
- ▶ Evolution and redundancy guaranteed by on site Modular Parallel Systems
- ▶ Intelligent battery management system extends the lifetime of batteries
- ▶ Static and Manual Bypass
- ▶ Optional Galvanic isolation transformer
- ▶ Communication with computers and network systems with SNMP availability
- ▶ Expandable battery blocks
- ▶ Low installation and operating costs
- ▶ Different voltage applications with refer to country mains characteristic ;
  - PDSP version for 380/400/415V(Ph\_Ph) applications
  - PDSP-U version for 200/208/220V(Ph\_Ph) applications
  - Special voltage applications other than stated values
- ▶ EPO (Emergency Power Off)

\* 3 phase in 1 phase out version is available (10 to 40 kVA) (380-400-415V version)  
 \* 50/60 Hz Frequency Converter version is available

## Accessories

### Communication

- Remote Monitoring Panel & 25m Cable For Remote Panel
- UPSMAN (Management Software)
- Multiserver Shutdown Licence
- Internal SNMP kit :  
 Internal Slot Card SNMP CSI2IBSC or CP504, slot box, cable
- External Adapter  
 SNMP Adapter Net Agent Mini DT 522  
 SNMP Adapter CSI2IBL  
 SNMP Adapter with Modbus CSI2ILM

### Other

- Splitt by-pass
- Parallel Kit
- Drawer Type Internal Battery Shelves 10 - 30kVA
- Special Battery Connection Cable for Drawer Type Shelves

### Battery Cabinets

UPS looking battery Cabinets (different battery configuration available)

- V14, V15, V24, V33, V34

Eco Cabinets (different battery configurations available)

- BC00, BC10, BC20, BC30, BC40, BC50, BC60



TESID Innovation and  
 Creativity Reward  
 2005



## Pyramid DSP Series Technical Specifications

MODEL (380-400-415V 3ph version)	PDSP 33010	PDSP 33015	PDSP 33020	PDSP 33030	PDSP 33040	PDSP 33060	PDSP 33080	PDSP 33100	PDSP 33120	PDSP 33160	PDSP 33200	PDSP 33250	PDSP 33300
Output power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300
Nominal Active Power (kW)	8	12	16	24	32	48	64	80	96	128	160	200	240
MODEL (200-208-220V 3Ph version)	PDSP- U33005	PDSP- U33007	PDSP- U33010	PDSP- U33015	PDSP- U33020	PDSP- U33030	PDSP- U33040	PDSP- U33050	PDSP- U33060	PDSP- U33080	PDSP- U33100	PDSP- U33125	PDSP- U33150
Output power (kva)	5	7,5	10	15	20	30	40	50	60	80	100	125	150
Nominal Active Power (kW)	4	6	8	12	16	24	32	40	48	64	80	100	120
INPUT													
Number of phases	3Ph+N+PE												
Nominal Voltage (Ph-Ph)	380V / 400V / 415V ( PDSP ) & 200V / 208V / 220V ( PDSP-U)												
Voltage range (%100 load)	(-15)% (+27)% @PYRAMID DSP / ±15% @PYRAMID DSP-U												
Voltage range (%64 load)	(-45)% (+27)%@PYRAMID DSP												
Voltage range (%42 load)	(-64)% (+27)%@PYRAMID DSP												
Nominal Frequency (Hz)	50 or 60												
Frequency range for online operation	±10%												
Input Current THD	≤4% (*) (**)												
Input Power Factor	0,99												
OUTPUT													
Power factor	0.8												
Number of phases	3Ph+N+PE (PDSP & PDSP-U)												
Voltage (3ph_ Phase to Phase)	200V / 208V / 220V (PDSP-U) or 380V/400V/415V (PDSP)												
Static Voltage Regulation at %100 Linear Load (online&battery mode)	<1%												
Voltage THD at rated linear load	<3%												
Crest Factor	3:1												
Frequency (Hz)	50 or 60												
Free Running Frequency (Hz)	± 0.01%												
Overload	125% for 10 minutes												
	150% for 1 minute												
Efficiency	up to 94% (**)												
BATTERY													
Type	Maintenance-free lead acid batteries												
Quantity (pcs ) PDSP version	62 ( 2*31 )									60 ( 2*30 )			
Quantity (pcs ) PDSP-U version	34 ( 2*17 )												
Battery Protection	Deep Discharge Protection with Auto Cut off												
Battery Test	Standard (Automatic and Manual)												
DISPLAY													
LED Display	Line, Bypass, Battery, Inverter, Load, Fault Indications												
LCD Display	Load%, Input & Output Frequency, Voltage & Current, Bypass voltage, Battery Voltage & Current, Temperature, Alarms												
STATIC BYPASS													
Number of phases	3Ph+N+PE												
Voltage Range for bypass operation	± 10%												
“Frequency Range for bypass operation (Hz)”	± 6% (Configurable)												
COMMUNICATION													
Interface (Communication Ports)	RS232 & RS422												
Dry Contact Signals	AC failure, Battery under voltage, bypass operation, output failure												
Others	EPO, Generator interface												
ENVIRONMENT													
Storage Temperature Range (°C )	-25 to +55 (15 to 40 recommended for longer battery life time)												
Operating Temperature Range (°C )	0 to 40 (20 to 25 recommended for longer battery life time)												
Relative Humidity Range	0-95% (non-condensing)												
Maximum Altitude without derating (m)	1000												
Protection Level	IP20												
PHYSICAL SPECIFICATIONS													
Dimensions wxdxh (cm)	40 x 78 x 107				52 x 90 x 130		67x73x163		85x78x182	98x87x195	96x87x186	134x108x195	
Weight (kg)	100	114	116	122	180	202	253	285	405	522	570	735	750
STANDARDS													
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC), EN 62040-3 (VFI-SS-III)												
(*) for source having THDv < 2 % @ nominal load    (**) varies depending on ups power													

(\*) for source having THDv < 2 % @ nominal load    (\*\*) varies depending on ups power

# Pyramid Dsp T Series

On-Line "Double Conversion" Technology, IGBT Rectifier UPS with Built in Isolation Transformer  
3 phase in / 3phase out 10 to 300 kVA

- ▶ IGBT Rectifier
- ▶ Real Digital Signal Processor (DSP) controlled
- ▶ Built in Output Isolation Transformer
- ▶ Input Power Factor Correction PFC( >0,99 )
- ▶ Low Total Harmonic Distortion Level (THDi  $\leq$  4%) and ( THDv < 1.5% )
- ▶ Wide Input Voltage Range
- ▶ Generator Compatible Operation
- ▶ Evolution and redundancy guaranteed by on site Modular Parallel Systems
- ▶ Intelligent battery management system extends the lifetime of batteries
- ▶ Synchronization Capability with external sources
- ▶ Static and Manual Bypass
- ▶ Communication with computers and network systems with SNMP availability
- ▶ Expandable battery blocks
- ▶ Low installation and operating costs
- ▶ EPO (Emergency Power Off)

## Accessories

### Communication

- Remote Monitoring Panel & 25m Cable For Remote Panel
- UPSMAN (Management Software)
- Multiserver Shutdown Licence
- Internal SNMP kit :  
Internal Slot Card SNMP CSI2IBSC or CP504, slot box, cable
- External Adapter  
SNMP Adapter Net Agent Mini DT 522  
SNMP Adapter CSI2IBL  
SNMP Adapter with Modbus CSI2ILM

### Other

- Splitt by-pass
- Parallel Kit

## Battery Cabinets

UPS looking battery Cabinets (different battery configuration available)

- V14, V15, V24, V33, V34

Eco Cabinets (different battery configurations available)

- BCOO, BC10, BC20, BC30, BC40, BC50, BC60





## Pyramid DSP T Series Technical Specifications

MODEL	PDSP-T 33010	PDSP-T 33015	PDSP-T 33020	PDSP-T 33030	PDSP-T 33040	PDSP-T 33060	PDSP-T 33080	PDSP-T 33100	PDSP-T 33120	PDSP-T 33160	PDSP-T 33200	PDSP-T 33250	PDSP-T 33300
Output Power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300
Active Power (kW)	8	12	16	24	32	48	64	80	96	128	160	200	240
INPUT													
Number of Phases	3Ph + N + PE												
Nominal Voltage (Ph-Ph)	380V/400V/415V												
Voltage range (100% load)	-15% ~ +27%												
Voltage range (64% load)	-45% ~ +27%												
Voltage range (42% load)	-64% ~ +27%												
Nominal Frequency (Hz)	50 or 60 ±10%												
Input Current THD	4% (*) (**)												
Input Power Factor	0,99												
OUTPUT													
Output Power factor	0.8												
Number of Phases	3Ph + N + PE												
Voltage	380V/400V/415V												
Static Voltage Regulation at %100 Linear Load (online&battery mode)	<1%												
Voltage THD at rated linear load	<1.5%												
Crest factor	3:1												
Free Running Frequency (Hz)	50 or 60 ± 0.01%												
Overload	125% for 10 minutes; 150% for 1 minute												
Efficiency	≥ 90% (**)												
STATIC BYPASS													
Voltage Range	380V / 400V (Ph-Ph) ± 10%												
“Frequency Range for bypass operation (Hz)”	±6% (Adjustable)												
BATTERY													
Type	Maintenance-free lead acid batteries												
Battery Quantity (pcs)	54 (2 x 27)												
Battery Protection	Deep discharge Protection with Auto Cut off												
Battery Test	Standard (Automatic and Manual)												
COMMUNICATION													
Interface (Communication Ports)	RS232 & RS422												
Dry Contact Signals	AC Failure, Battery Under Voltage, Bypass Operation, Output Failure												
Others	EPO, Generator Interface												
ENVIRONMENT													
Storage Temperature Range (°C )	-25 to +55 (15 to 40 recommended for longer battery life)												
Operating Temperature Range (°C )	0 to 40 (20 to 25 recommended for longer battery life)												
Relative Humidity Range	Up to 95% (non-condensing)												
Maximum Altitude without derating (m)	< 1000												
Protection Class	IP20												
PHYSICAL SPECIFICATION													
Dimensions (wxdxh ) cm	40 x 78 x 107			52 x 90 x 130		63,5x100x140		76 x 102,5 x 168,5	96x108x182		161x108x195		
Weight (kg)	235	238	273	450	502	625	680	790	1200	1290	1675	1775	
STANDARDS													
	EN 62040-1-1 (safety), EN 62040-2(EMC), EN 62040-3 (VFI-SS-III)												
(*) for source having THDv < 2 % @ nominal load    (**) varies depending on ups power													

## Modulera Series

On-Line "Double Conversion" Modular UPS System  
3 phase in / 3phase out  
10kVA – 520kVA

- ▶ Hot Swappable Decentralized Parallel Architecture
- ▶ DSP ( Digital Signal Processor ) Controlled Technology
- ▶ Modular N+X Parallel Redundancy
- ▶ Plug & Play Type Hot Swappable Power Modules
- ▶ Cold Start Function
- ▶ Parallel connection availability of UPS Frames up to 4pcs
- ▶ Wide Input Voltage Window (208Vac ~ 478Vac )
- ▶ Wide input frequency range ( 40Hz – 70Hz )
- ▶ High Overall Efficiency ( up to 95% )
- ▶ Increased Output Power Factor ( 0.9 )
- ▶ Unity Input Power Factor ( 0.99 )
- ▶ Low Input Total Harmonic Distortion Level (THDi <3 %)
- ▶ Fit into standard 19" Rack Cabinet
- ▶ Touch-screen LCD display for user's friendly operation
- ▶ EPO ( Emergency Power Off )
- ▶ Smart Fan Speed Control
- ▶ Common Battery Operation for parallel Frames
- ▶ Temperature Controlled Battery Charging
- ▶ Programmable Battery Voltage ( 32/ 34 / 36 / 38 / 40 blocks of 12V Batteries )
- ▶ Intelligent Charge Modes with smart charge current adjustment
- ▶ Powerful charger built in each Modular UPS Power Module
- ▶ Equip with Maintenance Bypass Switch for easy maintenance
- ▶ RS232 & 485 Ports as standard communication
- ▶ Megatec/Mod Bus protocol supported
- ▶ Optional Communication Interfaces :  
▶ (SNMP Card or DRY contact board)



## Modulera Series

MODEL	MDL 3300-60K	MDL 3300-100K	MDL 3300-200K	MDL 3300-250K	MDL 3300-300K	MDL 3300-320K	MDL 3300-520K	
Frame Capacity	10-60KVA/9-54KW	10-100KVA/9-90KW	10-200KVA/9-180KW	25-250KVA/22.5-225KW	30-300KVA/27-270KW	40-320KVA/36-288KW	40-520KVA/36-468KW	
MDL Module Capacity	10KVA/9KW, 15KVA/13.5KW, 20KVA/18KW, 25KVA/22.5KW, 30KVA/27KW, 40KVA/36KW							
INPUT								
Phase	3 Phase + Neutral + Ground							
Rated Voltage	380 / 400 / 415Vac							
Voltage Range	208 - 478Vac							
Frequency range	40Hz - 70Hz							
Power Factor	≥ 0.99							
Current THDi	≤3 (%100 non-linear load)					≤2 (%100 non-linear load)		
Generator Input	Present							
OUTPUT								
Phase	3 Phase + Neutral + Ground							
Rated Voltage	380/400/415Vac (adjustable from front panel)							
Power Factor	0.9							
Voltage Regulation	±1%							
Fre- quency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)						
	Battery Mode	(50/60 ±0.2)Hz						
Crest Factor	3:1							
THDv	≤2% with linear load, ≤2% with nonlinear load							
Waveform	Pure Sinewave							
Over Load	AC Mode	100% - 110%: 60min,110% - 125%: 10min, 125% - 150%: 1min,						
		≥150%: immediately transfers to bypass						
	Bat. Mode	100% - 110%: 60min,110% - 125%: 10min, 125% - 150%: 1min,						
		≥150%: immediately shutdown						
Efficiency	Up to 95%							
BATTERY								
Type	Maintenance-free lead acid batteries							
Quantity (12V VRLA batteries)	Configurable to 32/34/36/38/40 pcs per string							
Voltage (12V VRLA batteries)	384/408/432V/456V/480V DC							
Charging Current	Frame	18A Max	30A Max	60A Max		100A Max	80A Max	130A Max
		Charge voltage and current can be set from front panel according to battery capacity installed						
	MDL Module	6A Max				10A Max		
DISPLAY								
Status LED & LCD	Line Mode, Eco Mode, Fuse Conditions (Input, Output, Bypass, Manual Bypass), Bypass Mode, Battery Low, Battery Bad, Overload & UPS Fault							
Readings On Touch Front Panel LCD	Input Voltage, Input Frequency, Output Voltage, Output Frequency, Power Factor, Active Power (kW), Apperant Power (kVA), Load Percentage, Battery Voltage, Battery Current, Back Up Time(min.) & Inner Temperature							
Readings On MDL Modul LCD	Input Voltage, Input Frequency, Output Voltage, Output Frequency, Active Power (kW), Apperant Power (kVA), Load Percentage, Battery Voltage, Battery Current & Inner Temperature							
PROTECTION								
Short Circuit	Hold Whole System							
Overheat	Line Mode: Switch to Bypass; Backup Mode: Shut down UPS immediately							
Battery Low	Alarm and Switch off							
Self-diagnostics	Upon Power On and Software Control							
EPO (optional)	Shut down UPS immediately							
Battery	Advanced Battery Management							
Noise Suppression	Complies with EN62040-2							
Alarms	Line Failure, Battery Low, Overload, System Fault							
COMMUNICATION								
Standard	RS232, RS485, 2pcs Smart Slot Slot				RS232, RS485, Smart Slot			
Optional	SNMP (Megatec Protocol), Dry Contact Board, EPO							
ENVIRONMENT								
Operating Temperature	0°C - 40°C							
Storage Temperature	-25°C to +55°C							
Humidity	0 - %95 non condensing							
Altitude	< 1500m							
Noise	<60dBA (at 1 meter)							
STANDARDS								
	CE, EN/IEC 62040-2, EN/IEC 62040-1-1							

## Piller UNIBLOCK UBR - Hybrid Rotary UPS 150 kVA to 1300 kVA

The UNIBLOCK by virtue of its low output impedance inherently delivers fault current of 14 times the nominal full load. Offering fault current delivery similar to the systems utility transformer, security is provided even when utility power is not available to the site. This guarantees disconnection of a downstream fault within 10 milliseconds, without going to an unprotected bypass source, if available, as required by other UPS systems! With UNIBLOCK during fault clearing, full UPS function – including battery operation – is maintained and remaining loads are unaffected. The UNIBLOCK UBR assures that a localized fault won't take out the entire data centre.

### UNIBLOCK UBR FEATURES

- ▶ Hybrid UPS from 150kVA up to 40MVA
- ▶ Leading and lagging output power factor without derating
- ▶ Water cooling available using building's chilled water
- ▶ Unlimited crest factor
- ▶ Inherent fault clearing ability for short circuit faults without bypass
- ▶ Very high efficiency
- ▶ Virtual unity input power factor
- ▶ Sinusoidal input power factor



## Piller UNIBLOCK UBT - Rotary UPS 400 kVA to 1670 kVA

The UNIBLOCK UBT UPS system is uniquely engineered to optimize the combination of UNIBLOCK rotary UPS design with a battery or with an integrated flywheel that stores and releases kinetic energy to bridge any power outages. Voltage regulation, power factor correction and harmonic attenuation are in accordance with rotary UPS standards set by the UNIBLOCK. Single machines sized 400 kVA to 1670 kVA can be paralleled for redundancy and added capacity.

### UNIBLOCK UBT FEATURES

- ▶ Rotary UPS from 400kVA up to 50MVA
- ▶ Redundant on-board power supplies
- ▶ Leading and lagging output power factor without derating
- ▶ Unlimited crest factor and 100% load step capability
- ▶ Inherent fault clearing ability for short circuit faults without bypass
- ▶ Very high efficiency
- ▶ Virtual unity input power factor
- ▶ Natural sine-wave output 99% input/output harmonic isolation
- ▶ Medium voltage option available
- ▶ Highest reliability



## Piller UNIBLOCK UBTD - Rotary Diesel UPS 400 kVA up to 3000 kVA

The UNIBLOCK UBTD Diesel Rotary UPS combines all the benefits of a rotary UPS with a Diesel engine in one integrated unit. The system consists of the UNIBLOCK motor-generator connected via a clutch to the Diesel engine, all mounted on a single short base frame. The load is normally fed via an isolating and coupling choke connected to the utility supply. The choke has a second tapped connection to the motor generator.

In the event of short interruptions or complete outages, the load is supported initially by a short-term ride through source which can be either a conventional battery system or a Piller Powerbridge (kinetic energy store device). This option is unique to the Piller system. With the load safely supported, the Diesel engine is then given a command to start, and once fully up to speed, it takes over the long term support of the load by engaging the clutch seamlessly.

### UNIBLOCK UBTD FEATURES

- ▶ Diesel Rotary UPS from 400kVA up to 50MVA
- ▶ Leading and lagging output power factor without derating
- ▶ Unlimited crest factor and 100% load step capability
- ▶ Inherent fault clearing ability for short circuit faults without bypass
- ▶ Natural sine-wave output
- ▶ 99% input/output harmonic isolation
- ▶ Medium voltage option available
- ▶ Highest reliability
- ▶ Highly efficient





# Vision Battery

## Dry Type Maintenance-free Batteries

- \* Fully sealed
- \* Maintenance-free
- \* VRLA AGM Technology
- \* Solid and powerful design
- \* Wide Capacity Range
- \* Both Horizontal and Vertical operation
- \* Long Life

## Application Areas

- Uninterruptible Power Supplies
- DC Power Supplies
- Emergency Lighting
- Alarm and Security Systems
- Electronic Equipments
- Automatic Control Systems
- Weighing Systems
- Telecommunication
- Signalization Systems



Brand	Battery Type	Voltage (V) Capacity (Ah)	Lenght mm	Width mm	Height mm	Total Height mm	Terminal
Vision	CPI245	12V 4,5 Ah.	90	70	101	107	F1
Vision	CPI270	12V 7 Ah.	151	65	93.5	100	F1/F2
Vision	CPI290	12V 9 Ah.	151	65	94	100	F1/F2
Vision	CPI2100	12V 10Ah	151	98	95	101	F2
Vision	CPI2120	12V 12 Ah.	151	98	95	101	F2
Vision	CPI2170	12V 17 Ah.	181	77	167	167	F3/F4
Vision	CPI2200	12V 20 Ah.	181	77	167	167	F3/F4
Vision	CPI2240	12V 24 Ah.	166	175	125	125	F3/F4
Vision	6FM40	12V 40 Ah.	197	165	170	170	M6
Vision	6FM55	12V 55 Ah.	239	132	205	210	M6
Vision	6FM65	12V 65 Ah.	350	167	179	179	M6
Vision	6FM80	12V 80 Ah.	350	167	179	179	M6
Vision	6FMI00	12V 100 Ah.	330	171	215	220	M8
Vision	6FMI50	12V 150 Ah.	485	172	240	240	M8
Vision	6FM200	12V 200 Ah.	522	238	218	223	M8

# Leoch Battery

Dry Type Maintenance-free Batteries

- ▶ Fully sealed
- ▶ Maintenance-free
- ▶ VRLA AGM Technology
- ▶ Solid and powerful design
- ▶ Wide Capacity Range
- ▶ Both Horizontal and Vertical operation
- ▶ Long Life

## Application Areas

- Uninterruptible Power Supplies
- DC Power Supplies
- Emergency Lighting
- Alarm and Security Systems
- Electronic Equipments
- Automatic Control Systems
- Weighing Systems
- Telecommunication
- Signalization Systems



## Technical Specifications

Brand	Battery Type	Voltage (V) Capacity (Ah)	Length mm	Width mm	Height mm	Total Height mm	Terminal
Leoch	LP6-1,2	6V 1,2 Ah.	97	24	51,5	57,5	T1
Leoch	LP6-4,0	6V 4 Ah.	70	47	100	106	T1
Leoch	LP6-10	6V 10 Ah.	151	51	94	100	T2
Leoch	LPI2-1,2	12V 1,2Ah	97	43	52	58	T1
Leoch	LPI2-2,3	12V 2,3 Ah.	178	35	60	66	T1
Leoch	LPI2-4,5	12V 4,5 Ah.	90	70	101	107	T2
Leoch	LPI2-7,0	12V 7 Ah.	151	65	94,5	100	T2
Leoch	LPI2-9,0	12V 9 Ah.	151	65	94,5	100	T2
Leoch	LPI2-12	12V 12 Ah.	151	98	95	101	T2
Leoch	LPI2-17	12V 17 Ah.	181,5	77	167,5	167,5	T3
Leoch	LPI2-27	12V 27 Ah.	166,5	175	125	125	T3
Leoch	LPI2-40	12V 40 Ah.	197	165	170	170	T6
Leoch	LPI2-65	12V 65 Ah.	348	167	178	178	T6
Leoch	LPI2-80	12V 80 Ah.	348	167	178	178	T6
Leoch	LPI2-100	12V 100 Ah.	330	173	212	220	T11

	Battery Cabinet Type	UPS Range	Capacity											Cabinet dimensions			
		Cabinet	7 AH.	12 AH.	18 AH.	25 AH.	40 AH.	65 AH.	80 AH.	100 AH.	120 AH.	150 AH.	200 AH.	Width	Depth	Height	Weight
	BC Cabinets (All purpose)	BC 00	32	22	14	6	6							655	230	530	15
		BC 10	64	42	24	12	12							835	246	700	25
		BC 20	76	48	32	15	15	6	6					957	246	760	30
		BC 30	144	96	40	38	32	16	16					926	386	1073	50
		BC 40	120	72		32								828	386	846	35
		BC 50	240	144		64	48	32	32	32	8			1566	386	1166	80
		BC 60			90	100	80	64	64	64	45	45	32	1774	560	1781	230
	V type PDSP cabinets	V 14			62	31								400	765	1070	51
		V 15		62										400	765	1070	51
		V 24				32	31							525	880	1310	64
		V 33						35	35	35				835	1160	1310	143
		V 34				93	78							835	1160	1310	143
	V type Informer cabinets	BC 1000		6										135	430	390	10
		BC 2000	8											135	470	390	10
		BC 3000	12											135	470	390	10
	Informer Rack Cabinets	RMBC 1000		6										483	450	132	10
		RMBC 2000	8											483	512	132	10
		RMBC 3000	12											483	512	132	10
	V type Saver (Plus) DSP Cabinets	BC 1714			14									270	512	685	28
		BC 1426				14								270	655	685	30
		BC 0740	40											270	655	685	28
		BC 1720			20									270	655	685	30
		BC 2620				20								390	755	700	46
		BC 1232		32										270	655	685	30
	Saver DSP Rack Cabinets	RMBC 0714	14											483	535	134	11
		RMBC 1214		14										483	535	222	12
		RMBC 0720	20											483	535	222	11
		RMBC 1220		20										483	535	222	17
	BC Cabinet (DSP multipower)	MPBC	20	20										425	563	222	16
	V type DSP Multipower Cabinet	MPBC-V	20											445	677	132.9	15

Above battery configurations are given as per Lead Acid Maintenance free batteries

NiCd batteries are also available with rack type cabinets

Battery connection cables are available upon request with refer to ups&battery capacity and battery cabinet type

# AVR Series

Single Phase (2-30 kVA),  
Three Phase (6-1000kVA)

- ▶ Servo Motor Controlled Technology
- ▶ Fast Response for Fluctuations
- ▶ Reliable Stabilization for Secure Energy
- ▶ High efficiency in each model
- ▶ Short circuit protection
- ▶ Ability to work with non-linear loads
- ▶ Manual Bypass Switch
- ▶ Wide input voltage range version ( optional )
- ▶ Electro-mechanic (breaker module) high-low voltage protection ( optional )
- ▶ Output Isolation Transformer ( optional )
- ▶ Digital Display option available
- ▶ Higher IP applications are available
- ▶ Phase Independent Voltage Regulation for Three Phase Models



Inform AVR is used with any computer system, fax and photocopy machines, industrial, medical, laboratory, office appliances and household for secure energy.

Inform AVR protects your load from all fluctuations of the mains voltage and regulates it.

It disconnects the output voltage electro-mechanically when an increase or decrease occurs that is out of limits and prevents all the possible problems by electronic protection (optional).

The booster transformer and sensitive variac do the voltage regulation.

Servo system is based on the control of DC motor by thyristor.

Output voltage is observed by analogue or digital display (optional).

Over current protection is ensured by magnetic switch and inside cooling is assured by natural cooling or fan depending on power. In single- phase models special inside structure and natural cooling is applied. Connections of the unit are done by NKK model Terminals.

Phase protection, which is operated optionally, disconnects the output during low or high voltage value, and if there is no phase, again disconnects the output voltage by contactor. In order to avoid the possible problems that can be caused by sudden voltage fluctuations, Inform AVR includes a time relay, which can take the control in 2 seconds. It has a by-pass switch and on/off property.

Wide voltage range models may be produced upon request. The standard voltage range of these models may be altered upon request. Digital Version enables monitoring of the following parameters;

- Input/Output Voltage, Output Current (optional), output frequency
- It also has Regulator in operation, output voltage high / low LED indicators
- Digital AVR provides output is present (Regulator in operation) & Output voltage high / low dry contact alarm signals.

## Options(available for all power range)

- Digital Display
- Breaker Module (provides phase missing and low/high voltage protection)
- Wide Voltage Range Model available

## Automatic Voltage Regulator Technical Specifications

MODEL SINGLE PHASE	POWER (kVA)	Dimensions	Weight	Response	Input		Output				ENVIRONMENT					
		WxDxH(cm)	(kg)	V/Sn	Voltage (V) L-N	Max Current	Voltage (V)* L-N	Phase	Frequency	THD	Efficiency(%)	Max Current	Temperature	Audible Noise	Humidity	
e-020I	2	25 x 43 x 27	24	80	160-245	10,5A	220/230/240±%2	1 Ph+N	"same as input"	"w/o distortion, no affect on har- monics"	96%	95%	7,3A	0-40°C	<45dBA	0-95%
e-035I	3,5	25 x 43 x 27	26	80	160-245	19A	220/230/240±%2	1 Ph+N				12,7A	0-40°C	<45dBA	0-95%	
e-050I	5	50,5 x 39 x 28,5	42	80	160-245	27A	220/230/240±%2	1 Ph+N				19,4A	0-40°C	<45dBA	0-95%	
e-075I	7,5	50,5 x 39 x 28,5	50	80	160-245	39A	220/230/240±%2	1 Ph+N				29A	0-40°C	<45dBA	0-95%	
e-100I	10	53,5 x 44,5 x 35	58	80	160-245	53A	220/230/240±%2	1 Ph+N				39A	0-40°C	<45dBA	0-95%	
e-150I	15	36,5 x 62 x 64	120	80	160-245	79A	220/230/240±%2	1 Ph+N				58A	0-40°C	<45dBA	0-95%	
e-200I	20	49,5 x 73 x 77,5	127	80	160-245	106A	220/230/240±%2	1 Ph+N				74A	0-40°C	<45dBA	0-95%	
e-300I	30	49,5 x 73 x 77,5	138	80	160-245	159A	220/230/240±%2	1 Ph+N				111A	0-40°C	<45dBA	0-95%	
THREE PHASE	(kVA)	WxDxH(cm)	(kg)	V/Sn	Voltage (V) L-L	Max Current	Voltage (V)* L-L	Phase	Frequency	THD	Efficiency(%)	Max Current	Temperature	Audible Noise	Humidity	
e-0603	6	39,5 x 53,5 x 88	62	80	277-424	3x10,5A	380/400/415±%2	3 Ph+N	"same as input"	"w/o distortion, no affect on har- monics "	95%	3x7,2A	0-40°C	<50dBA	0-95%	
e-1053	10,5	39,5 x 53,5 x 88	62	80	277-424	3x19A	380/400/415±%2	3 Ph+N				3x12,7A	0-40°C	<50dBA	0-95%	
e-1503	15	39,5 x 58 x 91,5	190	80	277-424	3x27A	380/400/415±%2	3 Ph+N				3x19,4A	0-40°C	<50dBA	0-95%	
e-2253	22,5	39,5 x 58 x 91,5	206	80	277-424	3x39A	380/400/415±%2	3 Ph+N			3x29A	0-40°C	<50dBA	0-95%		
e-3003	30	44,5 x 68,5 x 102,5	248	80	277-424	3x53A	380/400/415±%2	3 Ph+N			3x39A	0-40°C	<50dBA	0-95%		
e-4503	45	44,5 x 68,5 x 102,5	270	80	277-424	3x79A	380/400/415±%2	3 Ph+N			3x58A	0-40°C	<50dBA	0-95%		
e-6003	60	54,5 x 103 x 131,5	360	80	277-424	3x106A	380/400/415±%2	3 Ph+N			3x74A	0-40°C	<50dBA	0-95%		
e-7503	75	54,5 x 103 x 131,5	420	80	277-424	3x131A	380/400/415±%2	3 Ph+N			3x91A	0-40°C	<50dBA	0-95%		
e-9003	90	54,5 x 103 x 131,5	550	80	277-424	3x158A	380/400/415±%2	3 Ph+N			3x110A	0-40°C	<50dBA	0-95%		
e-11003	110	61,5 x 114,5 x 153	624	80	277-424	3x191A	380/400/415±%2	3 Ph+N			3x133A	0-40°C	<50dBA	0-95%		
e-12003	120	61,5 x 114,5 x 153	624	80	277-424	3x210A	380/400/415±%2	3 Ph+N			3x146A	0-40°C	<50dBA	0-95%		
e-15003	150	61,5 x 114,5 x 153	624	80	277-424	3x265A	380/400/415±%2	3 Ph+N			3x182A	0-40°C	<50dBA	0-95%		
e-22003	220	88,5 x 180,5 x 132,5	1200	80	277-424	3x387A	380/400/415±%2	3 Ph+N			3x269A	0-40°C	<50dBA	0-95%		
e-27003	270	88,5 x 180,5 x 132,5	1200	80	277-424	3x470A	380/400/415±%2	3 Ph+N			3x327A	0-40°C	<50dBA	0-95%		
e-36003	360	220,5 x 139,5 x 157,3	1600	80	277-424	3x633A	380/400/415±%2	3 Ph+N			3x438A	0-40°C	<50dBA	0-95%		
e-50003	500	184,5x135,5x152	3200	80	277-424	3x877A	380/400/415±%2	3 Ph+N			3x610A	0-40°C	<50dBA	0-95%		
e-100003	1000	300x150x200	4000	80	277-424	3x1758A	380/400/415±%2	3 Ph+N			3x1223A	0-40°C	<50dBA	0-95%		

\* ±1% to ±5% adjustable at Digital Version

# SVR Series

Single Phase (5-30 kVA),  
Three Phase (15-120 kVA)

- Thyristor Controlled Technology
- Microprocessor Controller
- Wide Input Voltage Range
- Reliable Output Voltage Stability
- Overload Capability up to 130% Load
- Electronic Control
- Swift response to voltage fluctuations
- High efficiency
- Manual Bypass Switch
- Operation Capability at high Temperature and Humidity
- Short Circuit and Overload Protection



Static Voltage Regulator ( SVR ) is designed to protect your electrical equipment from voltage fluctuations of the mains.

The working mechanism of SVR is different from the classic automatic servo voltage regulator. Instead of a mechanical system causing the changes , the direct triggering of a fast thyristor is responsible for an accelerated response. SVR is composed of a transformer, semiconductor switch power unit which triggers this transformer, and microprocessor block which acts as an control and user interface.

SVR operation is based on coil selecting principle, which means supplying the consumer machine with auto transformer coils inside

of it. It ensure machines (like motors, rectifier, and air conditioner) to operate properly and safely with selecting coil if a fluctuation and a deviation occurs in mains.

Furthermore the possibility of corrosion, calibration and maintenance requirements can be avoided.

The input voltage, output voltage ( if regulator is in operation ), output current, mains frequency can be observed from the Panel. Besides; the following information can be also obtained from SVR; Load on bypass or regulator, indication for availability of input for bypass, overload indication.

Options(available for all power range)

- Normal Range (between 150 to 265VAC)
- Wide Range (between 110 to 270VAC)
- Output voltage tolerance 2% and 5% options are available

## Static Voltage Regulator Technical Specifications

MODEL	SINGLE PHASE						THREE PHASE						
NORMAL RANGE	SVR0501	SVR0701	SVR1001	SVR1501	SVR2001	SVR3001	SVR1003	SVR1503	SVR2203	SVR3003	SVR6003	SVR9003	SVR12003
WIDE RANGE	SVR0501w	SVR0701w	SVR1001w	SVR1501w	SVR2001w	SVR3001w	SVR1003w	SVR1503w	SVR2203w	SVR3003w	SVR6003w	SVR9003w	SVR12003w
Power (kVA)	5	7,5	10	15	20	30	10,5	15	22,5	30	60	90	120
INPUT													
Voltage	220 Vac 1 ph						380 Vac 3 ph						
Voltage Range (Normal range)*	150-260 Vac						260-450 Vac						
Voltage Range(Wide range)*	110-270 Vac						190-467 Vac						
Frequency	50/60 Hz						50 /60Hz						
Frequency Tolerance	±%5						±%5						
Current (max) normal range*	32	47	66	94	125	188	22.0	32	47	66	125	188	250
Current (max) wide range*	46	68	91	136	182	273	32.0	46	68	91	182	273	364
OUTPUT													
Voltage	220V AC 1 ph						380V AC 3 ph						
Voltage Tolerance	±%3 ( ±%2 and ±%5 optional )												
Response Time	320V / sec ( @ ±%3 voltage accuracy )												
Frequency	50 Hz												
Power Factor	1												
Crest Factor	3												
Current (max per phase)	23	34	46	68	91	136	16	23	34	46	91	136	181
Overload													
%100 / %115	10min												
%115 / %130	1min%												
> %130	Bypass												
EFFICIENCY													
	>95%												
DISPLAY/ALARMS													
7segment Display	Input Voltage,Output Voltage, Output Current, Frequency, Fault Codes, Temperature												
LED Display	Input Out Of Range, Regulator Operation, Bypass Operation regulator on, regulator off												
Alarms	INPUT VOLTAGE LOW; INPUT VOLTAGE HIGH; OUTPUT VOLTAGE LOW; OUTPUT VOLTAGE HIGH; OUTPUT CURRENT HIGH; BYPASS OVER CURRENT; FREQUENCY OUT OF RANGE												
COMMUNICATION													
Dry Contacts	Regulator Operation and Mains present Signals												
From 1m	<50 dB (A)												
ENVIRONMENTAL CONDITIONS													
Temperature													
Operating	0°C.....+40°C												
Storage	-30°C.....+75°C												
Relative Humidity													
Operating	%20.....%90												
Storage	%20.....%95												
Protection	IP20												
PHYSICAL SPECIFICATIONS													
Dimensions (cm) WxDxH	50,5x50x31,7			54,5x50x41,7		53x66x80,8		38x50x96		55,2x61x111,5		73,5 x 89,5 x 152	
* the specifications are indicated as per 220VAC Output Voltage Value, these values may vary for 230V or 240V output voltage applications													

\* the specifications are indicated as per 220VAC Output Voltage Value, these values may vary for 230V or 240V output voltage applications.



# Info Charger

25Amp to 200Amp

- ▶ Microprocessor Controller
- ▶ IGBT Technology (ICH Series)
- ▶ PFC Technology (ICC Series)
- ▶ Transformerless Design
- ▶ Wide Input Voltage Range
- ▶ Operation according to constant voltage and current principle
- ▶ Adjustable Boost and Nominal Charge Voltage
- ▶ Adjustable Output Current
- ▶ High Voltage, Over Current, Short Circuit Protections
- ▶ Over Temperature Protection
- ▶ Alphanumerical LCD Display and Control Panel
- ▶ Low DC Voltage Protection (LVD) - Optional
- ▶ Dry Contact Alarms- Optional
- ▶ Parallel Connection Availability at ICH Series - Optional
- ▶ Small Footprints, Compact Size



ICC Series



ICH Series

## Info Charger Technical Specifications

TYPE	ICC2460	ICC4830	ICC11015	ICH122450	ICH1224100	ICH1224200	ICH4850	ICH48100	ICH11025	ICH11050
Power	60Amp	30Amp	15Amp	50Amp	100Amp	200Amp	50Amp	100Amp	25Amp	50Amp
DC Voltage	24VDC	48VDC	110VDC	12 or 24VDC			48VDC		110VDC	
INPUT										
Input Phase	1Phase			1phase / 3Phase						
Nominal Voltage Range	90-265VAC			176-280VAC ( Ph - N )						
Frequency Range	50/60Hz ± 10%									
Power Factor	>0,98			>0,8						
OUTPUT										
Nominal Voltage	24VDC	48VDC	110VDC	12VDC or 24VDC			48VDC		110VDC	
Nominal current	50Amp	50Amp	25Amp	50Amp	100Amp	200Amp	50Amp	100Amp	25Amp	50Amp
Output Current Adjustment value	0 to 50A	0 to 50A	0 to 25A	0 to 50A	0 to 100A	0 to 200A	0 to 50A	0 to 100A	0 to 25A	0 to 50A
Max Output Current	110% of Inominal									
Boost Charge Voltage	100% - 120% of the nominal output voltage									
Output Fluctuation	<1% rms AC Output Voltage									
Dynamic Response	less than 2% of output voltage									
Output protection	electronic short circuit / over voltage									
DISPLAY										
LCD Display Panel	Voltage, Current, Temperature, Charge and Status Informations									
LED Display Panel	Overload, Line, Battery, Load, LVD, Fault Indications									
GENERAL										
Cooling	Forced ( FAN Cooling )									
Isolation Voltage	2000VAC between output and chassis									
Efficiency	90%									
Operating Temperature	0 – 40 °C									
Relative Humidity	0% - 90%									
Input/Output Connections	Terminals									
Fuses	input, load and Battery									
PHYSICAL SPECIFICATIONS										
Net Weight (kg)	11,6			35						
Dimensions (mm) (WxDxH)	250x420x280			265x556x560						
STANDARDS										
Safety	EN62040-1-1									
EMC	EN62040-2									
Performance	EN62040-3									
Protection Class	IP 20									
OPTIONS										
Dry Contact Card	9pcs contact alarms (NO/NC)			8pcs contact alarms (NO/NC)						
LVD	Low Voltage Disconnect (Contactor)									
Parallel Connection	Not Available			up to 7 units						

## Info-Sts Series (19" Single Phase)

1 Phase in – 1 Phase out / 50Amp to 100Amp  
19" Rack Mountable

- Uninterruptible transfer between the independent sources
- Synchron/asynchron transfer feature
- "In flight" transfer mode
- RS232/RS485 communication facilities
- Source priority selection
- Automatic and Manual transfer in case of failure on both sources
- Module replacement without interruption under load
- Fast Diagnostic Response with microprocessor controller
- Internal (2 pcs) manual bypass
- Easy Maintenance availability
- Current Distortion level less than 1%
- High Efficiency
- Transfer to the second source in less than 5 ms in case of over low/high voltage values



### Info STS Series (19" Single Phase) Technical Specifications

MODEL	STS1050		STS1100	
GENERAL SPECIFICATIONS				
Nominal Voltage	220V / 230VAC (Monophase)			
Nominal Operation Current	50A		100A	
Transfer Time	5ms			
PHYSICAL SPECIFICATIONS				
Cable Entry	Rear			
Air Entry/ Exit	Bottom/Top			
Advised Cable Cross Section	10mm2		35mm2	
Dimensions WxDxH	(19"x360mmx2U)		(19"x360mmx4U)	
Weight (kg)	9kg		17kg	
ENVIRONMENT				
Max Altitude	2000m above sea level			
Humidity	0-90%			
Operating Temperature	0-40°C			
Audiable Noise (from 1m)	<45dBA			
Protection Class	IP20			
STANDARDS				
Standards	EN 62310-2, EN 62310-1, EN 60950-1			

## Info-Sts Series (Three Phase)

3 Phase in – 3 Phase out / 50Amp to 600Amp

- ▶ Increased power quality
- ▶ Easy monitoring all parameters on LCD display
- ▶ Fast microcontroller (32 mips)
- ▶ Power blackout protection
- ▶ Automatic static switching
- ▶ Remote monitoring of input power sources
- ▶ Easy static and mechanical transfer between separate input sources
- ▶ Remote management of power events
- ▶ Power event logging
- ▶ Advanced RS232 communication features
- ▶ DRY contact alarm interface
- ▶ Password protected login system from remote site (time Access)
- ▶ 2 redundant power supplies for electronic boards (hot swappable)
- ▶ Easy front access to all components inside of the STS
- ▶ Second protection cover on live circuits which prevents electrical shock
- ▶ Input sources protected by fuses
- ▶ 3 positioned Maintenance bypass switch which prevents cross currents between input sources
- ▶ User adjustable parameters by entering a password.
- ▶ Built in real time clock.
- ▶ Alarm history (with date and time)
- ▶ Automatic transfer test from a remote site or using front panel
- ▶ Front panel Lamp test
- ▶ External emergency shutdown (EPO) input
- ▶ Hot plug construction during maintenance bypass
- ▶ High current output tolerance up to 1000%
- ▶ Temperature sensor inside the Cabinet
- ▶ Fast voltage black-out circuit
- ▶ Input phase balance and phase sequence fault detect circuit
- ▶ Adjustable Input source frequency lower/upper limits



## Info STS Series (Three Phase) Technical Specifications

MODEL - 3pole	STS350	STS3100	STS3150	STS3200	STS3250	STS3300	STS3400	STS3600
MODEL - 4pole		STS4100	STS4150	STS4200	STS4250	STS4300	STS4400	STS4600
INPUT								
Voltage	380,400VAC, (3 wires for 3pole version And 4 wires for 4pole version)							
Voltage Range	310-430VAC							
Frequency	50 or 60Hz +/-5%							
Voltage Distortion	<10%							
Input voltage error window	adjustable							
Input frequency error window	adjustable							
OUTPUT								
Current	50A	100A	150A	200A	250A	300A	400A	600A
Voltage	380,400VAC, (3 wires for 3pole version And 4 wires for 4pole version)							
Crest factor	up to 3,5							
Synchronized transfer time	max 1.8 msec (on 0 current mode)							
Non-synchronised transfer time	max 10 msec in 0 current mode, 0-25 sec adjustable in delay mode and in 0 current mode							
load power factor range	0,6 lagging to 0,9 leading							
Efficiency	>98%							
Overload	100% to 150% = 1 minute 150% to 200% = 10 seconds >200% = 0,5 seconds 1000% = 20 msecs							
Type of transfer	break before make							
As standard	Overcurrent inhibit LCD front panel, MBP							
DISPLAY								
LCD Display	2 lines 16 character LCD Display							
Monitored Parameters	Source 1 Voltages, Source 2 Voltages, Output Load, Phase Balance, Synchronization Source 1 Frequency, Source 2 Frequency, Phase Angel Degree, Temperature							
Indications	8 LEDs arranged as mimic diagram							
Control buttons	5 push button interactive with LCD panel							
Event log	64 recorded alarm logs from panel or RS232							
COMMUNICATION								
Interface (Communication Ports)	RS 232 Standard							
Dry contact signals	Output Inhibit Relay, Summary Alarm Relay, Static Or Manual Transfer Relay, SI /S2 Backfeed Trip Relay, Preferred Source Indicator Relay, Load Is Connected To Alternate Input Source Relay							
GENERAL								
Neutral connection	available at 4pole version							
transfer time	<5msec : within CBEMA & IEEE for synchronized sources <11msec: for unsynchronized sources.							
Manual transfer switch	available							
ENVIRONMENT								
Operating Temperature	0-40°C							
Relative Humidity (non-condensing)	0-90%							
PHYSICAL SPECIFICATIONS								
Dimensions (mm) WxDxH	685x530x1500			685x570x1770				915x735x1935
Weight (kg)	175			205	215	220	240	340
STANDARDS								
Standards	EN 62310-2, EN 62310-1, EN 60950-1							

## Mono/Poly Crystal Solar Panels



- ▶ High efficiency Monocrystal/Polycrystal cells
- ▶ Wide capacity range, 10W to 265W per panel
- ▶ Standard IP65 junction box with bypass diode
- ▶ Possible to increase capacity and voltage with parallel and serial configurations
- ▶ Tempered glass front cover
- ▶ EVA encapsulated structure
- ▶ Aluminium alloy frames

### Application Areas

- Signalization
- Residence applications
- Street lighting
- Suitable for charging 6Vdc, 12Vdc batteries
- Power Stations
- Car Batteries
- Boat applications
- Pump applications
- Power Stations



## Solar Panels Technical Specifications

Model	Solar Cell	Dimensions (LxWxH) (mm)	Weight (kgs)	Maximum Power	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Max. Power Voltage (Vmp)	Max. Power Current (Imp)
YL240P 29b	Polycrystal	1650x990x40	18,5	240Wp	37,5V	8,75A	29,3V	8,18A
YL245P 29b	Polycrystal	1650x990x40	18,5	245Wp	37,5V	8,83A	29,6V	8,28A
YL250P 29b	Polycrystal	1650x990x40	18,5	250Wp	37,6V	8,92A	29,8V	8,39A
YL255P 29b	Polycrystal	1650x990x40	18,5	255Wp	37,7V	9,01A	30,0V	8,49A
YL260P 29b	Polycrystal	1650x990x40	18,5	260Wp	37,7V	9,09A	30,3V	8,59A
HSL 60P 240	Polycrystal	1636x988x40	19	240Wp	37,0V	8,63A	29,6V	8,11A
HSL 60P 245	Polycrystal	1636x988x40	19	245Wp	37,4V	8,70A	30,1V	8,15A
HSL 60P 250	Polycrystal	1636x988x40	19	250Wp	37,7V	8,79A	30,4V	8,23A
HSL 60P 255	Polycrystal	1636x988x40	19	255Wp	37,8V	8,89A	30,8V	8,29A
HSL 60P 260	Polycrystal	1636x988x40	19	260Wp	38,1V	8,93A	31,2V	8,35A
HSL 60P 265	Polycrystal	1636x988x40	19	265Wp	38,3V	8,97A	31,5V	8,42A
JA-240P	Polycrystal	1650x991x40	22	240Wp	37,5V	8,47A	30,5V	7,85A
JA-250M	Monocrystal	1650x991x40	19,5	250Wp	38,1V	8,72A	30,3V	8,24A
CHN 230P	Polycrystal	1650x991x39	18,5	230Wp	37,3V	8,40A	29,1V	7,99A
CHN 235P	Polycrystal	1650x991x40	19,5	235Wp	37,3V	8,40A	29,8V	7,98A
CHN 240P	Polycrystal	1650x991x40	19,5	240Wp	37,5V	8,48A	30,0V	8,00A
CHN 245P	Polycrystal	1650x991x40	19,5	245Wp	37,7V	8,52A	30,4V	8,05A
CHN 250P	Polycrystal	1650x991x40	19,5	250Wp	37,9V	8,62A	30,6V	8,17A
CHN 255P	Polycrystal	1650x991x40	19,5	255Wp	38,2V	8,67A	30,7V	8,30A
CHN 260P	Polycrystal	1650x991x41	20,5	260Wp	38,2V	8,67A	30,9V	8,42A
HSPV-10M	Monocrystal	337x288x28	1,4	10Wp	22,0V	0,61A	17,6V	0,57A
HSPV-20M	Monocrystal	536x353x30	2,8	20Wp	22,0V	1,21A	17,8V	1,12A
HSPV-40M	Monocrystal	630x540x28	4,4	40Wp	22,0V	2,42A	18,0V	2,22A
HSPV-50M	Monocrystal	630x550x23	5,6	50Wp	22,0V	3,03A	18,0V	2,78A
HSPV-60M	Monocrystal	829x542x35	5,6	60Wp	22,0V	3,64A	18,0V	3,33A
HSPV-80M	Monocrystal	1194x542x35	8,1	80Wp	21,4V	4,98A	17,6V	4,55A
HSPV-90M	Monocrystal	1194x542x35	8,1	90Wp	22,0V	5,56A	18,0V	5,00A
HSPV-120P	Polycrystal	1478x670x35	12	120Wp	21,3V	7,51A	17,4V	6,90A
HSPV-130M	Monocrystal	1470x680x35	11,5	130Wp	21,5V	8,06A	17,6V	7,39A
HSPV-245M	Monocrystal	1640x992x40	19,5	245Wp	37,2V	8,77A	29,9V	8,19A
SPP-240P	Polycrystal	1640x992x34	18	240Wp	37,2V	8,44A	30,3V	7,93A
SPP-245P	Polycrystal	1640x992x34	18	245Wp	37,4V	8,54A	30,4V	8,06A
SPP-250P	Polycrystal	1640x992x34	18	250Wp	37,5V	8,63A	30,7V	8,15A
SPP-255P	Polycrystal	1640x992x34	18	255Wp	37,7V	8,72A	30,9V	8,27A
LCS-235P	Polycrystal	1650x991x40	19,5	235Wp	37,3V	8,40A	29,5V	7,96A
LCS-240P	Polycrystal	1650x991x40	19,5	240Wp	37,5V	8,48A	29,7V	8,08A
LCS-245P	Polycrystal	1650x991x40	19,5	245Wp	37,7V	8,52A	29,8V	8,21A
LCS-250M	Monocrystal	1650x991x40	19,5	250Wp	37,9V	8,62A	30,9V	8,07A
LCS-255M	Monocrystal	1650x991x40	19,5	255Wp	38,2V	8,67A	31,3V	8,29A



## Victron Off Grid Inverters



### Phoenix Compact

12/24 VDC

- 180VA to 1200VA capacity range
- High efficiency, small size, RS485 port
- Pure Sinewave Output
- Stand up to 200% instant power



### Phoenix

12/24/48 VDC

- 1200VA to 5000VA capacity range
- High efficiency, RS485 port
- Pure Sinewave Output
- Stand up to 200% instant power



### Multiplus

12/24/48 VDC

- 800VA to 5000VA capacity range
- High efficiency, grid charge feature
- Pure Sinewave Output
- Programmable
- RS485 port
- Grid/Inverter transfer switch
- Power assist feature
- Stand up to 200% instant power



### Quattro

12/24/48 VDC

- 3kVA – 5kVA – 8kVA – 10kVA capacity range
- High efficiency, compact size
- Grid and Generator charge feature
- Pure Sinewave Output
- Programmable
- RS485 port
- Grid/Inverter transfer switch
- Power assist feature
- Stand up to 200% instant power

## PWM Solar Charger



### LS0512R

Ideal for small off-grid solar lighting system that needs light and timer control.  
12 V 5 A



### LS0512

Ideal for off-grid solar system that loads are normally on or controlled by manual.  
12 V 5 A



### LS1024R/LS2024R

Light and timer control (Single timer and dual timer optional) Ideal for public lighting area, such as street light, path way, garden lights, parking area, bus station etc.  
12/24 V 10 A / 20 A



### LS1024/LS2024

New generation lighting controller for off-grid solar system, such as home system, traffic system, CCTV system. It adopts the most advanced digital technique and operates fully automatically.  
12/24 V 10 A / 20 A



### VS2048 / 3048 / 4048 / 5048 / 6048

New generation controller for off-grid solar system, such as street light, solar home system or small power station etc.  
24/48V 20A / 30A / 40A / 50A / 60A



### VS1024 / 2024 / 3024 / 4024 / 5024 / 6024

New generation controller for off-grid solar system, such as street light, solar home system or small power station etc.  
12/24V 10A / 20A / 30A / 40A / 50A / 60A

## Mppt Solar Charger



### BLUE SOLAR MPPT 150/70

97,5% Efficiency  
12V / 1000W / 24V / 2000W 36V / 3000W / 48V / 4000W  
150VDC PV Input  
70A Output Current  
Programmable



### Tracer 1206RN SOLAR CHARGER

97% Efficiency  
12/24 V – 10 A  
Nightmode feature, RS 485

### Tracer 2210RN SOLAR CHARGER

97% Efficiency  
12/24 V – 20 A  
Nightmode feature, RS 485



### BUCK 1500W MPPT Solar Charger

95% Efficiency  
12V / 24V / 36V / 48V  
150VDC PV Input  
60A Output Current



### ISCC MPPT 300

Compatible with 12Vdc Solar Panels  
300Wp panel connection

### ISCC MPPT 600

Compatible with 24Vdc Solar Panels  
600Wp panel connection



### SUNSTAR SOLAR CHARGER 3

KW/5KW  
97% Efficiency  
12/24/36/48 V – 50-80 A  
SS-50C-MPPT / SS-80C-MPPT  
MAX 140 VDC  
SS-50CX-MPPT / SS-80CX-MPPT  
MAX 240 VDC



### Mobile Solar Set 1000

PACKAGE CONTENT			
Solar Panel	180Wp	180Wp	180Wp
Charger	12V/50A PWM	24V/25A MPPT 600W	24V/15A MPPT 400W
Gel Type Battery	12V/55AH	12V/55AH	12V/55AH
Inverter (Pure Sinewave)	KS 1K 12 1000VA/800W	MKS 1K 24 1000VA/800W	Phoenix 1200
Cable & Connector	SET	SET	SET
Cabinet with wheel (WxDxH) (cm)	60*60*60	60*60*60	60*60*60
Application	14W Led Lighting, Cell Phone Charger (35W), TV & Satellite		

### Mobile Solar Set 2000

PACKAGE CONTENT			
Solar Panel	360Wp	360Wp	360Wp
Charger	24V/50A PWM	24V/25A MPPT 600W	24V/15A MPPT 400W
Gel Type Battery	12V/100AH	12V/100AH	12V/100AH
Inverter (Pure Sinewave)	KS 2K 24 2000VA/1600W	MKS 2K 24 2000VA/1600W	Phoenix 2000
WW & Connector	SET	SET	SET
Cabinet with wheel (WxDxH) (cm)	60*60*60	60*60*60	60*60*60
Application	14W Led Lighting, Cell Phone Charger (35W), TV & Satellite, Mini Refrigerator (600Wh/day), No-frost Refrigerator (2200Wh/day), Notebook (350W)		

### Mobile Solar Set 3000

PACKAGE CONTENT			
Solar Panel	540Wp	540Wp	540Wp
Charger	24V/50A PWM	24V/25A MPPT 600W	24V/25A MPPT 600W
Gel Type Battery	12V/150AH	12V/150AH	12V/150AH
Inverter (Pure Sinewave)	KS 3K 24 3000VA/2400W	MKS 3K 24 3000VA/2400W	Phoenix 3000
Cable & Connector	SET	SET	SET
Cabinet with wheel (WxDxH) (cm)	60*60*60	60*60*60	60*60*60
Application	14W Led Lighting, Cell Phone Charger (35W), TV & Satellite, Mini Refrigerator (600Wh/day), No-frost Refrigerator (2200Wh/day), Notebook (350W), Dish Washer (4400Wh/day), Washing Machine (4400Wh/day)		

\* Average daylight duration is considered as 5 hours a day

# Medical Isolated Power Systems



IT Systems are distribution systems which are preferred less compared to Grounded Systems at Industrial Institutions. The main reason for this is to maintain the installation integrity. But due to the electrical security that it provides, IT Systems are preferred to be used at the supply of the critical divisions in the Institutions. The main difference that discriminates IT systems from Grounded Systems (PN or PP) is the non-presence of the Institution Grounding. This is obtained by isolation transformer and each load that is connected to this distribution system has its own individual grounding. These systems are mainly used in the supply of the rooms like surgery rooms at the hospitals.

## Benefits of the Isolation System;

- In the event of first isolation failure, energy blackout does not happen. The security equipment controls the system continuously therefore the energy blackout is prevented.
- The Medical Devices continue their normal operations.
- Fault Currents are reduced to non-critical levels which means the leakage current that is present within the room is reduced from mA levels to  $\mu A$  levels.
- A possible inconvenience in the surgery room is prevented where energy is reserved and blackout does not happen.

## System Contents ;

- Isolation, Load & Temperature Monitoring Device ( ILT-IO7-V.4)
- ILT-IO7-V.4 is a multi-functional device produced for electrical control at Isolation Systems. The following parameters can be observed with ILT-IO7-V.4 at IT Systems ;
- The insulation resistance of a one- or multiple-phase (for a maximum of 3) AC 230 V IT • system
- The insulation resistance of an AC 24 V IT system (OP lamps with 1 or 2 one-phase • circuits)
- The load current of one- or multiple-phase transformers up to 8 kVa (through • converters)
- The temperature of the transformer (through a PTC or break contact).
- It monitors all measuring lines. Its built-in full-graphics display allows you intuitive menu-led operation while providing you with the details of all operating and fault messages. You can also edit all of the parameter-isable unit settings with a menu system and the parameters are stored in the non-volatile EEPROM.

## Alarm Announcer ( BMTI4)

This terminal is used for displaying operating and fault signals in the IT networks in areas used for medical purposes in conformity with DIN VDE 0100 T710-2002:11. The unit also has a disinfection-friendly foil surface. The unit's intuitive menu control makes it easy to use. It can also create individualized alarm texts with configuration software, making it possible to switch up other trades.

The large-scale fully graphic display is lighted, allowing a clearly structured display of the information from several systems. Large programmable multifunction buttons enable you to control the display. Manual test and service functions can be initiated on the system bus. The electrical unit's technical data and operating states are transmitted through the CAN bus.

It also shows the operating states on the (red, green and yellow) LED's in addition to the text display. The unit can be upgraded to include digital inputs and outputs by adding a piggyback printed circuit board. The operating and alarm terminals can monitor one another during operation if two or more BMTI4 units are used and they indicate the breakdown of a BMTI4 unit.



## Isolation Transformer

Isolation Transformers are the main devices of Isolated Systems. With the help of isolation transformer, the supplied room is isolated from the Grounded System. Consequently the leakage current within the room is reduced from mA levels to  $\mu A$  levels. Besides there is also one advantage that is; in case of initial Phase-Ground short circuit, there shall be no blackout. The hospital isolation transformers that supply the mission-critical locations shall have the following important electrical features ;

The nominal power of the transformer shall be maximum 10 kVA.

- It shall be Single Phase. In case of it being 3 Phase then the L-L Voltage should be 250 • VAC.
- The Short Circuit Voltage shall comply the  $U_k < \% 3$  condition.
- No Load Condition Current shall comply the  $I_o < \% 3$  condition.
- The Initial Current value shall be less than 8In

# Operation Room Control Panel

- ▶ Totally microprocessor controlled flexible design
- ▶ LED Front Display with 6-digit for time and 6-digit for stopwatch
- ▶ Spare supply for clock against mains cut-off
- ▶ Control and dimmer functions for light groups, Operation lamp and Negatoskop
- ▶ Music broadcast and sound level adjustment with HiFi amplifier and internal speaker
- ▶ Hands-free interphone
- ▶ Measurements, analogue values and visual&audible alarms when defined limits are exceeded of temperature, humidity, room pressure and filter dirt level
- ▶ System alarms and critical situations can be monitored through status display
- ▶ Operation ON/NONE, flow, damper, UV light, gas discharge, electric heater and air-conditioner controls
- ▶ Communication with automation through analogue and digital inputs-outputs
- ▶ TCP-IP, RS485 or CAN-BUS protocols
- ▶ 2mm thick stainless steel front panel that complies with DIN 4301 standard



MODEL	GRD024-050	GRD024-100
Display Type	2x16 LCD display	5" Touch panel LCD, 2x16 LCD display
Clock Display	6-Digit 4cm LED display	6-Digit 4cm LED display
Stopwatch Display	6-Digit 4cm LED display	6-Digit 4cm LED display
User Info Input	Membrane Panel	Touch Panel
<b>INPUTS</b>		
O-10V Analogue Sensor Input	10 Channel	16 Channel
Music Input	3 Channel	4 Channel
<b>OUTPUTS / LED Display</b>		
Lighting	3 Channel / (On-Off) -( L1/L2/L3)	4 Channel / (On-Off) -( L1/L2/L3/L4)
Operation Lamp	1 Channel / (On-Off)	2 Channel / (On-Off)
Negatoskop	1 Channel / (On-Off)	1 Channel / (On-Off)
UV Lamp	1 Channel / (On-Off)	1 Channel / (On-Off)
Heater	1 Channel / (On-Off)	1 Channel / (On-Off)
Conditioner (Full / Half Flow)	2 Channel / (On-Off)	2 Channel / (On-Off)
Lighting Dimmer	1 Channel / -	1 Channel / -
Negatoskop Dimmer	1 Channel / -	1 Channel / -
Spare	-	3 Channel / -
Music	3 Channel / (On-Off)	4 Channel / (On-Off)
Alarm	- / (On-Off)	- / (On-Off)
Alarm Mute	- / (On-Off)	- / (On-Off)
<b>GAS PRESSURE DISPLAY</b>	<b>(High / Normal / Low)</b>	<b>(High / Normal / Low)</b>
O2	Available	Available
N2O	Available	Available
CO2	Available	Available
Air5	Available	Available
VAC	Available	Available
<b>MEASUREMENTS</b>	<b>Unit / Range / Input Type</b>	<b>Unit / Range / Input Type</b>
Temperature	°C / 0 - 50 °C / 0 - 10V Analogue	°C / 0 - 50 °C / 0 - 10V Analogue
Humidity	% / 0 - %100 / 0 - 10V Analogue	% / 0 - %100 / 0 - 10V Analogue
Room Temperature	Pascal / 0 - 100Pa / 0 - 10V Analogue	Pascal / 0 - 100Pa / 0 - 10V Analogue
Filter Dirt Level	Pascal / 0 - 100Pa / 0 - 10V Analogue	Pascal / 0 - 100Pa / 0 - 10V Analogue
<b>BUZZER</b>	<b>Available</b>	<b>Available</b>
Communication	TCP IP — RS485 — CANBUS	TCP IP — RS485 — CANBUS
Front Panel Material	DIN 4301 (2mm Stainless Steel)	DIN 4301 (2mm Stainless Steel)
Supply	220V — 50Hz	220V — 50Hz
Internal Dimension (Width/ Height/Depth) (mm)	550/420/90	440/455/90
External Dimension (Width/ Height) (mm)	585/460	585/460



## LV Panel Systems

### Solutions That We Offer

- Low Voltage (Lv) Distribution Panels
- Lighting Panels
- Compensation Panels
- Mcc (Motor Control) Panels
- Meter Panels
- Dc Panel Systems
- Vrf Panels
- Otomation Panels
- Marine Panels
- Arrestors Panels



### Application Area

- Hospital
- Shopping Center
- Residence
- Factory
- Otel
- Industrial Plant
- Telecommunication

FEATURES	STANDING PANEL	WALL MOUNT PANEL
<b>Paint</b>	RAL 7035 with Powder coated	RAL 7035 with Powder coated
<b>Structure</b>	Metal gasket Concealed hinged from 3-points	Metal gasket Concealed hinged from 3-points
<b>Frame</b>	2mm galvanized sheet metal	1,2mm galvanized sheet metal
<b>Internal</b>	1,5mm galvanized sheet metal	1,5mm galvanized sheet metal
<b>Door</b>	2mm DKP sheet metal	1,2mm DKP sheet metal
<b>Cable Entry</b>	Top & Bottom	Top & Bottom
<b>Protection Level</b>	IP41/IP54	IP41/IP54

## INFORACK

### 19" Rack Cabinet & Accessories

- Aesthetic looking and wide product range (6U, 9U, 12U....47U)
- Design availability of front & back doors with secure, locking full length
- Protection Against dust entry
- Removable back door and side covers for easy installation
- Standard cable inlet and outlets (with special brush protection)
- Internal cabinet organizer system suitable for structural cabling
- Maximum cabling efficiency
- Special structure for communication and data cabling units
- Reliable and flexible solutions
- Assembled and disassembled structure option ensures the easy delivery & installation
- Adjustable front and back 19" mounting rails
- Shatterproof glass or perforated panel options
- Wide accessory options (shelve, socket, wheels, fan groups, etc)
- Active and silent ventilation with variable fan options
- RAL 7035 Light Grey or RAL 9005 Black Color Options
- Customized cabinet applications according to various size and dimension demands





***ALDE COMPANY***

Italian City-1 No:446 ERBIL / IRAQ  
Phone: 0 750 818 30 83 / 0 750 818 30 82

•  
[www.alde.com.tr](http://www.alde.com.tr)

•  
[info@alde.com.tr](mailto:info@alde.com.tr)  
[mkalkan@alde.com.tr](mailto:mkalkan@alde.com.tr)  
[alde@alde.com.tr](mailto:alde@alde.com.tr)