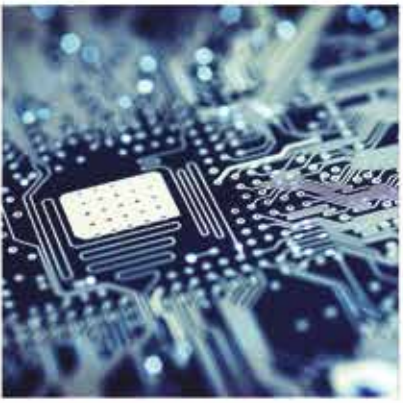


A Group brand legrand

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 32,000 m² 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.

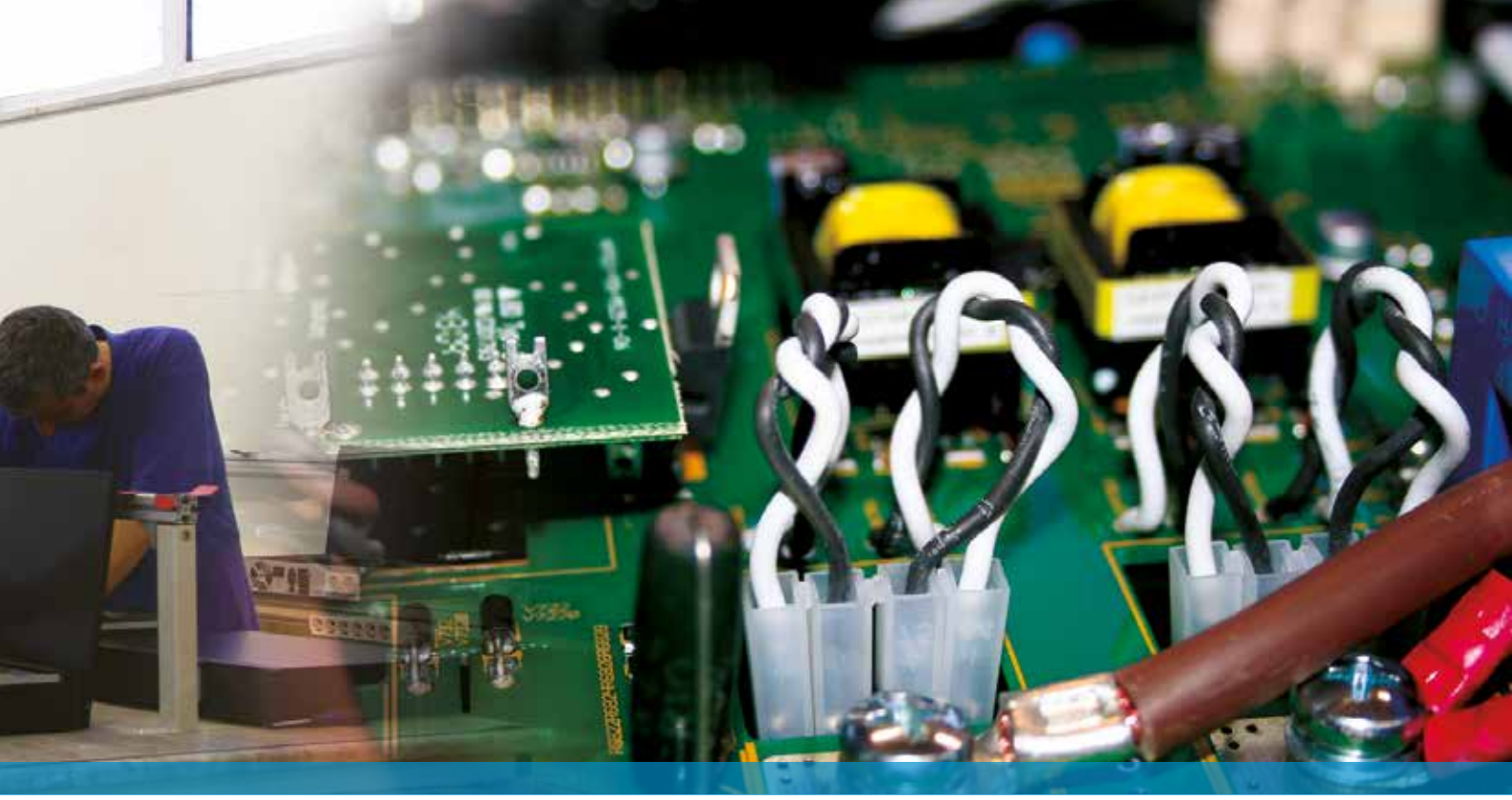
Apart from UPS Systems expertise, with the new investment, Inform focused on research and development on DC Power Supply field as well. Inform is offering latest technology DC Power Supply Systems of which the quality and technology is proven with many critical installations in GSM field.
Inform is ambitious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

PRODUCT		POWER												
LINE INTERACTIVE		**600 VA**	**800 VA**	**1000 VA**	**1500 VA**	**2000 VA**	**3000 VA**							
Line Interactive	GUARD S COMPACT	√	√	√	√									
	GUARDIAN/ GUARDIAN LCD	√	√	√	√	√								
	INFORMER / INFORMER rack						√							
	INFORMER COMPACT			√		√	√							
ONLINE UPS		**1 kVA**	**2 kVA**	**3 kVA**	**5 kVA**	**6 kVA**	**10 kVA**	**15 kVA**	**20 kVA**	**30 kVA**	**40 kVA**			
1 Ph in -1 Ph out	SINUS / SINUS rack	√	√	√										
	SINUS Premium & Premium LCD	√	√	√										
	SINUS LCD /convertible	√	√	√										
	DSP MULTIPOWER /convertible				√	√	√							
	DSP FLEXIPOWER			√	√	√	√							
	GREEN TRIERA			√	√	√	√							
3 Ph in - 1 Ph out	DSP MULTIPOWER /convertible						√	√	√					
	DSP FLEXIPOWER						√							
	SAVER PLUS DSP							√	√					
	DSP MULTIPOWER /tower							√	√					
	PYRAMID DSP						√	√	√	√	√			
		10 kVA	**15 kVA**	**20 kVA**	**30 kVA**	**40 kVA**	**80 kVA**	**100 kVA**	**120 kVA**	**160 kVA**	**200 kVA**	**250 kVA**	**300 kVA**	**400 kVA**
3 Ph in - 3 Ph out	STARK Series	√	√	√	√	√								
	ETR EVO	√	√	√	√	√	√	√	√	√	√			
	PYRAMID DSP Premium	√	√	√	√	√	√	√	√	√	√	√	√	√
	PYRAMID DSP	√	√	√	√	√	√	√	√	√	√	√	√	√
	PYRAMID DSP T	√	√	√	√	√	√	√	√	√	√	√	√	
	PYRAMID PLUS	√	√	√	√	√	√	√	√	√	√	√	√	
	MODULERA Series			√		√	√	√	√	√	√			

Guard_S Compact Series

Line Interactive Technology
600VA to 1500VA (Tower Model)

- *Microprocessor controlled Line Interactive Technology*
- *Boost and Buck Automatic Voltage Regulation (AVR)*
- *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*
- *LED Display Panel*
- *Cold Start Function*
- *Communication Port and Remote Monitoring Software**
- *Tel / Modem Internet surge protection **
- *Compact size and user friendly operation*

**Available at AP models only*

Guard_S Compact Series Technical Specifications

MODEL	GUARD_S 600A/ AP	GUARD_S 800AP	GUARD_S 1000AP	GUARD_S 1500AP
Capacity (VA)	600	800	1000	1500
INPUT				
Voltage	230V or 220V ± 25%			
Frequency	50 or 60 Hz ± 5Hz (auto sensing)			
OUTPUT				
Power Factor	0.6			
Voltage (On battery)	230V or 220V ± 10%			
Waveform (On battery)	Simulated Sinewave			
Frequency (On battery)	50 or 60 Hz ± 1Hz			
Voltage Regulation (AVR)	AVR automatically increase output voltage 15% above input voltage if -9% to-25% of nominal AVR automatically decrease output voltage 13% below input voltage if +9% to+25% of nominal			
Transfer Time	4 ms			
Outlets				
IEC Version	3pcs IEC C13		6pcs IEC C13	
Schuko Version	1pc Schuko		2pcs Schuko	
BATTERY				
Type	Maintenance-free lead acid batteries			
Recharge Time	6-8 hours (to 90% of full capacity)			
Voltage	12VDC		24VDC	
Quantity	1x12V 7Ah	1x12V 9Ah	2x12V 7Ah	2x12V 9Ah
DISPLAY				
LED Display	2 LEDs for Line / Back up and Battery Low / Fault		4 LEDs for Line, Back up, fault and Overload	
PROTECTION				
	Short Circuit, Overload, Noise Suppression, Spike, Battery Overdischarge, Modem/Network (AP Models only)			
COMMUNICATION				
Interface (Communication Ports)	RS 232 at AP models only	RS232 Standard		
Software	Present at AP model only	Standard		
AUDIBLE ALARMS				
	Backup Mode, Low Battery, Overload, Fault			
ENVIRONMENT				
Operating Temperature	0-40 °C			
Humidity	0-95% non-condensing			
Audible Noise at 1m	<40dBA			<45dBA
Protection class	IP20			
PHYSICAL SPECIFICATIONS				
Tower				
Net Weight (kg)	6	7,5	13	16
Shipping Weight (kg)	7	8,5	14,2	17,5
Dimensions (mm) WxHxD	96x172x355		148x235x361	
STANDARDS				
Standards	EN 62040-1-1 (safety); EN62040-2 (EMC)			

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	172 to 286VAC				
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				
AUIDIBLE ALARMS					
	Backup Mode, Low Battery, Overload, Fault				
ENVIRONMENT					
Operating Temperature	0-40 °C				
Humidity	0 to 95% 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 Effciency 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	1 pc Schuko & 2 pcs IEC C13	1 pc Schuko & 3 pcs IEC C13	1 pc 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)	USB Standard		
Software	Standard		
ENVIRONMENT			
Operating Temperature	0-40 °C		
Humidity	0 to 95% 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
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 Rack Type

Informer Rack Type
Battery Cabinet

UPS

Informer Battery Cabinet

Informer Series Technical Specifications

MODEL	INF 3000	
Capacity (VA)	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
Voltage	48 VDC	
Quantity (internal battery)	4 x 12V 7Ah	4 x 12V 9Ah
Back up Time	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 95% non-condensing	
Audible Noise at 1m	< 45 dBA	
Protection Class	IP20	
PHYSICAL SPECIFICATIONS		
Tower Type		
Net Weight (kg)	32	34
Dimension (mm)	135x470x390	
19" Rack Mount Type		
Dimension (WxDxH) mm	483x512x132	
STANDARDS		
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 ±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 Rack Type

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	0,98%		
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% for10seconds		
Whole efficiency	up to 88%		
Inverter efficiency	>90%		
Transfer Time	0ms		
Outlets	2pcs IEC C13 & 1pc Schuko Outlets	3pcs IEC C13 & 1pc Schuko Outlets	3pcs IEC C13 & 1pc 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			
Temparature	0°C - 40°C		
Humidity	0-95% non-condensing		
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% : Continous		
	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	2pcs IEC C13 & 1pc Schuko	3pcs IEC C13 & 1pc Schuko	3pcs IEC C13 & 1pc 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, Overlaod, 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 immidiately		
Over Temperature	Normal Mode: Transfers to Bypass Mode, Battery Mode: UPS shuts down immidiately		
COMMUNICATION			
Interface (Communication Ports)	RS-232 Standard		
Options	Dry Contact Board, USB Board, SNMP Card		
ENVIRONMENT			
Temparature	0°C - 40°C		
Humidity	0% - 95% (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			
	Internal&External SNMP, Dry Contact Board, Software		

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*
- *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	6 pcs IEC C13 or 2pc Schuko	6 pcs 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
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		
ENVIRONMENT			
Temparature	0°C - 40°C		
Humidity	0% - 95% (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 (Rack)	440x450x88	440x650x88	440x650x88
STANDARDS			
	EN 62040-1-1 (safety), EN 62040-2(EMC)		
ACCESORIES			
	Internal&External SNMP, Dry Contact Board, External Manual Bypass, Rail Kit, Software		

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 (kVA)	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 4.5Ah (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					
ENVIRONMENT						
Operating Temperature	0 °C... + 40 °C					
Proposed Temp. to extend battery life	20 - 25 °C					
Humidity	up to 95% (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					
ACCESORIES						
	Internal&External SNMP, Dry Contact Board, External Manual Bypass, Rail Kit, External Battery Connection Cable, External Socket Box, External Additional Charging Board Software					

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

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 3kVA)*
- *Integrated Manual Bypass (excluding 3kVA)*
- *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*
- *Possible to operate as 50Hz/60Hz Frequency Converter*
- *Extended Back up time with External Battery Cabinet*

Accessories

Communication

• UPSMAN (Management Software)
• Internal SNMP kit
CP504, slot box, cable
• Internal USB Board
• External Adapter
SNMP Adapter Net Agent Mini DY 522
SNMP Adapter CS141BL

Other

• Additional Chargers:
200W Charger Board for 3kVA
500W Charger Board for 3kVA
1000W Charger Unit for 5-6-8-10kVA

Battery Cabinets

• Eco Cabinets (different battery configurations available)
BC00, BC10, BC20, BC30, BC40, BC50, BC60

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 95% (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)					
ACCESORIES						
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 125% to 150% overload	10 min 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	up to 95% (non-condensing)					
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					

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 (Optional)*
- *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	
ENVIRONMENT		
Operating Temperature	0 °C - 40 °C	
Proposed Temp. to extend battery life	20 - 25 °C	
Humidity	up to 95% (non-condensing)	
Audible Noise at 1 m	<60 dB	
Protection Class	IP 20	
PHYSICAL SPECIFICATIONS		
Net Weight	60kg	62kg
Dimensions (mm) (WxDxH)	290x650x770	
STANDARDS		
Standards	EN62040-1-1 (Safety); EN62040-2 (EMC); EN62040-3 (Performance); EN60950-1	
ACCESORIES		
Optional	Internal&External SNMP, Dry Contact Board, External Manual Bypass, External Battery Connection Cable, External Additional Charging Board Software, Parallel Kit	

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	up to 95% (non-condensing)	
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	

ETR EVO Series

On-Line Double Conversion "3Level IGBT" Technology
3 Phase in- 3 Phase out
10 to 200 kVA

- *3Level IGBT Rectifier & Inverter Technology*
- *Real Digital Signal Processor (DSP) controlled transformerless design*
- *High Output Power Factor (1)*
- *Increased AC-AC Efficiency (96,5%)*
- *Unity Input Power Factor (p.f. > 0,99)*
- *Low Input Current THD (<4%)*
- *Low Output Voltage THD (<2%)*
- *Wide input voltage range*
- *Built-in Static & Manual Bypass*
- *Soft Start Feature*
- *Parallel connection availability up to 8 units*
- *Adjustable Battery Qty with optional DC-DC Charger/Booster at 10-15-20kVA Compact version*
- *Intelligent battery management system extends the life time of batteries*
- *Colorful Graphical Multi-Functional TouchScreen LCD Panel*
- *Event Log Display up to 380 Events*
- *Advanced communication possibility via RS232*
- *MODBUS connection through RS 485*
- *Generator Port for Generator Friendly Operation*
- *EPO Port for Emergency Power Off*
- *50/60Hz Frequency Converter Operation Mode (Adjustable from LCD Panel)*
- *Management and monitoring software available for all operating systems*
- *Communication with computers and network systems through Optional SNMP*
- *Optional Programmable 4pcs Relays for dry contact signals*
- *Compact dimension*

ETR EVO Series Specifications

MODEL	ETR EVO 33010	ETR EVO 33015	ETR EVO 33020	ETR EVO 33030	ETR EVO 33040	ETR EVO 33060	ETR EVO 33080	ETR EVO 33100	ETR EVO 33120	ETR EVO 33160	ETR EVO 33200
Output power (kVA)	10	15	20	30	40	60	80	100	120	160	200
Nominal Active Power (kW)	10	15	20	30	40	60	80	100	120	160	200
INPUT											
Number of Phases	3Ph+N+PE										
Nominal Voltage (Ph-Ph)	380V / 400V / 415V										
Voltage Range (%100 Load)	(-15%) (+20%)										
Voltage Range (%50 Load)	(-45%) (+20%)										
Nominal Frequency (Hz)	50 or 60										
Frequency range for online operation	45-65Hz										
Input Current Harmonics (THDi)	≤4% (*) (**)										
Input Power Factor (PFi)	0,99										
OUTPUT											
Power factor	1										
Number of Phases	3Ph+N+PE										
Nominal Voltage (Ph-Ph)	380V/400V/415V (adjustable from front display panel)										
Static Voltage Regulation at %100 Linear Load (online&battery mode)	<1%										
Dynamic Voltage Regulation at Online Mode (0-100% Linear Step Load)	±5% rms <20ms (instantenous voltage recovery below 3ms)										
Voltage THD at rated linear load	<2%										
Voltage THD at rated non-linear load	<4%					<5%					
Phase Displacement	120 deg. (<± 2 deg.) at 100% unbalanced load										
Crest factor	3:1										
Frequency (Hz)	50 or 60Hz (adjustable from front display panel)										
Free Running Frequency	± 0.01% (battery operation)										
Overload @ Online & Battery Operation	101% to 125%.....10 min. 125% to 150%.....1 min. >150% ....: transfers to Bypass										
Overload @ Bypass Operation	continous operation @ 101% to 150% continue to operate at 151% to 200% if the fuse installed in Distrubition Panel upstream on bypass line does not trip Stops bypass operation when Load ≥200%										
AC-AC Efficiency	%96(**)										96,5%(**)
ECOMODE Efficiency	98,50%										
BATTERY											
Type	Maintenance-free lead acid batteries										
Charge Value (C)	Nominal x 0,1C (Adjustable from LCD Panel)										
Quantity @ STANDARD version	60pcs										
Internal Battery Qty @ STANDARD version	60pcs 12V 7-9Ah				Not Available						
Quantity @ COMPACT version	20 to 52pcs	30 to 52pcs	36 to 52pcs								
Internal Battery Qty @ COMPACT version	Max. 36pcs 12V 7-9Ah										
Battery Protection	Deep Discharge Protection with Auto Cut off, Temperature controlled battery charging										
Battery Test	Standard (Automatic and Manual)										
PROTECTION											
EPO (Emergency Power Off)	UPS cuts the output										
Over Temperature	Online Mode	If Bypass is within the limits; transfers to Bypass Mode. When Inverter temperature returns to limit values UPS transfers to Online Mode.									
	Battery Mode	If Bypass is within the limits; transfers to Bypass Mode. When Inverter temperature returns to limit values UPS transfers to Battery Mode.									
Others	Input & Output Over/Under Voltage protection, Input & Output Over Current protection , Short Circuit Protection Overload Protection										
FRONT DISPLAY PANEL											
Display	3.5" TFT Touch Screen with UPS Operation Modes & Energy Flow Diagram										
Measurements	Input (Rectifier)	Voltage (Vac, per phase); Current (Aac, per phase); Frequency (Hz)									
	Output (Inverter)	Voltage (Vac, per phase); Current (Aac, per phase); Frequency (Hz); Load (%, per phase); Power (kVA, per phase); Power (kW, per phase); Load Power Factor (per phase)									
	Bypass	Voltage (Vac, per phase); Frequency (Hz)									
	Battery	DC Bus Voltage (±Vdc); Battery Voltage (±Vdc); Charge/Discharge Current (±Adc); Temperature (°C); Remaining Back up Time (minute)									
Built-In Controls	Inverter/Bypass-Eco Mode Priority; Rectifier/Inverter/Bypass Enable or Disable										
Adjustments from front panel	Alarm&Key Voice; Display Brigtness; Relay Functions; Priority (Online or ECO Mode); Date&Time; Language; Battery Test										
BYPASS											
Number of Phases	3Ph+N+PE										
Voltage Range (V)	380/400/415V (-15% +12%) (adjustable from LCD Panel)										
Frequency Range (Hz)	47-53 or 57-63 (adjustable from LCD Panel)										
Transfer Time	0ms										
Static Bypass	YES										
Manual Maintenance Bypass Switch	Built-in										
COMMUNICATION											
Interface (Communication Port)	RS232 & RS485 MODBUS										
Dry Contact Signals (Optional)	4pcs Relays configurable to ; " General Alarm", "Input Failure", "Battery Failure", "Output Failure", "Bypass Active", "Output Over-load", "High Temperature" Dry contact signals										
Others as standard	Emergency Power Off (EPO) , Generator interface										
PHYSICAL SPECIFICATIONS	ETR EVO 33010	ETR EVO 33015	ETR EVO 33020	ETR EVO 33030	ETR EVO 33040	ETR EVO 33060	ETR EVO 33080	ETR EVO 33100	ETR EVO 33120	ETR EVO 33160	ETR EVO 33200
Dimensions WxDxH(cm)-STANDARD ver.	40 x 75 x 110				52 x 88 x 131		67x77x165		85 x 80 x 185		
Dimensions WxDxH(cm)-COMPACT ver.	26,5 x 79 x 102,5										
Weight (kg) - STANDARD ver.	100	114	116	122	180	202	253	285	405	522	570
Weight (kg) - COMPACT ver.	80	80	85								
STANDARDS											
Standards	IEC/EN 62040-1 (SAFETY), IEC/EN 62040-2(EMC), IEC/EN 62040-3(Performance) VFI-SS-111										

(*) for source having THDv < 2 % @ nominal load
(**) may vary depending on "ups power" & "Load %

STARK Series

On-Line "Double Conversion" Technology,
DSP Controlled IGBT Rectifier UPS
3 phase in / 3phase out 10 to 40kVA

- *IGBT Rectifier*
- *Real Digital Signal Processor (DSP) controlled transformerless design*
- *High Output Power Factor (p.f.: 0,9)*
- *Input Power Factor Correction PFC(>0,99)*
- *Low Input Total Harmonic Distortion Level (THDi ≤ 3%)*
- *High Efficiency (up to 93%)*
- *Wide Input Voltage Range*
- *Cold Start Availability*
- *Increased Efficiency with Eco Mode Operation*
- *Fan Speed Control depending on internal temperature and load %*
- *Parallel Redundant Operation up to 4 Units*
- *Common Battery Application availability at Parallel Systems*
- *Configurable Battery Qty*
  16, 18 or 20pcs @ 10 to 30kVA / 32, 34, 36 or 40pcs @ 40kVA)
- *3 Step Intelligent battery charging system*
- *Static and Manual Bypass Built-in*
- *User Friendly LCD/LED Display Panel with functional keypads*
- *Remaining back up time indication on the LCD Display panel*
- *Power derating operation availability at high temperature and altitude*
- *EPO (Emergency Power Off) Function*
- *Short Circuit, Overload, Overtemperature, Deep Discharge protections*
- *USB, RS232, RS485 & Dry Contact Communication Ports*
- *Compact dimension with internal battery placement availability*

Accessories Options

- *Additional Relay Card*
- *SNMP Card(Internal)*
- *Parallel Connection Cable*

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

STARK Series Specifications

MODEL	ST3310	ST3315	ST3320	ST3330	ST3340
Power (kVA)	10	15	20	30	40
Power (kW)	9	13,5	18	27	36
INPUT					
Phase Configuration	3Ph + N + PE				
Nominal Voltage	380 / 400 / 415 VAC				
Voltage Range (Full Load)	304-478				323-478
Voltage Range (Half Load)	208-478				
Frequency	50/60 Hz ±10% (auto sensing)				
Power Factor	0,99				
Total Harmonic Distortion (THDi)	3%				
OUTPUT					
Power Factor	0,9				
Phase Configuration	3Ph + N + PE				
Nominal Voltage	380 / 400 / 415 VAC (adjustable)				
Wave Form	Pure Sine Wave				
Total Harmonic Distortion at 100% load	≤2% with linear load ≤5% with non linear load				
Frequency	50Hz or 60Hz (adjustable)				
Frequency Tolerance (free running)	(50/60±0.2%)Hz @ Battery Operation				
Static Voltage Regulation (0%-100% load)	<1%				
Crest Factor	3:1				
Transfer Time	0sec				
Overload	60 min @ (%100-%110)				
	10 min @ (%110-%125)				
	1 min @ (%125-%150)				
	Transfers to Bypass @ ≥%150 (On-line Mode)				
Total Efficiency	Up to 93%				
BATTERY					
Type	Maintenance-free lead acid batteries				
Recharge Time (for Internal Battery)	4-6h up to 90%				
Quantity per String	16/18/20pcs				32/34/36/38/40pcs
Internal Battery Type	7Ah, 9Ah				None
Internal Battery Quantity	Up to 40pcs			Up to 60pcs	None
Standard Charging Current	1,35A	2,7A		4A	10A
Max Charging Current	10A				
Cold Start	Present				
DISPLAY					
Operation Modes	Normal Mode, Back up Mode, Eco Mode, Parallel Mode				
LCD display	Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load%, Battery Voltage, Battery Current, Autonomy Time, Temperature				
PROTECTION					
	Overload, Over Voltage, Overheat, Short Circuit, Low Battery				
COMMUNICATION					
Interface (Communication ports)	USB, RS485, 3pcs Dry Contact Signal				
Dry Contact (standard)	UPS Battery Low, AC Power Failure, Shut down UPS				
ENVIRONMENT					
Storage Temperature	-25°C - +55°C (15 to 40°C recommended for longer battery life time)				
Operating Temperature	0°C - 40°C (20 to 25°C recommended for longer battery life time)				
Humidity	up to 95% (non-condensing)				
Max. Altitude without derating	up to 1000 meters				
Audible Noise at 1 m	<55 dB				<58 dB
Protection Class	IP20				
PHYSICAL SPECIFICATIONS					
Dimensions(mm) (WxDxH)	250x828x868				
Weight - without battery (kg)	57	63	64	71	73
STANDARDS					
Standards	EN62040-1-1 (Safety); EN62040-2 (EMC)				
ACCESORIES					
Optional	SNMP & Additional Relay Board				

Pyramid DSP Premium Series

On-Line "Double Conversion" Technology,
DSP Controlled IGBT Rectifier UPS
3phase in / 3phase out 10 to 400kVA

- *High Output Power Factor : 0,9*
- *Graphical Touch Screen Front Display Panel*
- *IGBT Rectifier*
- *Real Digital Signal Processor (DSP) controlled transformerless design*
- *Input Power Factor Correction PFC(>0,99)*
- *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*
- *EPO (Emergency Power Off)*
- *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*

Accessories

Communication
- *Remote Monitoring Panel &25m Cable For Remote Panel*
- *UPSMAN (Management Software)*
- *Multiserver Shutdown Licence*
- *Internal SNMP kit :*
  Internal Slot Card SNMP CS141BSC or CY504, slot box, cable
- *External Adapter*
  SNMP Adapter Net Agent Mini DY 522
  SNMP Adapter CS141BL

Other
- *Split 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

Pyramid DSP Premium Series

MODEL	PDSP-P 33010	PDSP-P 33015	PDSP-P 33020	PDSP-P 33030	PDSP-P 33040	PDSP-P 33060	PDSP-P 33080	PDSP-P 33100	PDSP-P 33120	PDSP-P 33160	PDSP-P 33200	PDSP-P 33250	PDSP-P 33300	PDSP-P 33400
Output power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400
Nominal Active Power (kW)	9	13,5	18	27	36	54	72	90	108	144	180	225	270	360
INPUT														
Number of phases	3Ph+N+PE													
Nominal Voltage (3ph Phase to Phase)	380V/400V/415V													
Voltage range	(-15)% (+27)%													
Voltage range (%64 load)	(-45)% (+27)%													
Voltage range (%42 load)	(-64)% (+27)%													
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 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)	62 (2*31)								60 (2x30)					
Battery Protection	Deep Discharge Protection with Auto Cut off													
Battery Test	Standard (Automatic and Manual)													
DISPLAY														
3.5" Graphical Touch Screen	Graphical Flow Diagram for Line, Rectifier, Bypass, Battery, Inverter and Load Input & Output Frequency, Voltage & Current, Load Power Factor, Load%, Load Active & Apparent Power, Bypass Voltage & Frequency, Battery Voltage, Current & Temperature, Autonomy Time (min),													
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, RS485 (ModBus)													
Relay Contact Signals (Adjustable)	Programmable 4 Relay Contacts to any of following signals ; General Alarm, Input Failure, Battery Failure, Output Failure, Bypass Acvite, Output Overload, High Temperature													
Others	EPO, Generator Interface													
ENVIRONMENT														
Storage Temperature Range (°C)	-25 to +55 (15 to 40 recomended for longer battery life time)													
Operating Temperature Range (°C)	0 to 40 (20 to 25 recomended for longer battery life time)													
Relative Humidity Range	0-95% (non-condensing)													
Maximum Altitude without derating (m)	1000													
Protection Level	IP20													
Audible Noise Level from 1m (dBA)	50		52		55		58	60	62		67			
PHYSICAL SPECIFICATIONS														
Output power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400
Dimensions WxDxH (cm)	40 x 78 x 107				52 x 90 x 130	67 x 73 x 163		85 x 78 x 182	98x87x195		134x108x195			
Weight (kg)	100	114	116	122	180	253	285	405	522	570	735	825	900	925
STANDARDS														
Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (VFI-SS-111)													

(*) 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 400kVA (PDSP version)
3 phase in / 3phase out 5 to 200kVA (PDSP-U version)
3 phase in / 1phase out 10 to 40kVA (1ph output 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*

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Accessories

Communication

- Remote Monitoring Panel &25m Cable For Remote Panel
- UPSMAN (Management Software)
- Multiserver Shutdown Licence
- Internal SNMP kit :
  Internal Slot Card SNMP CS141BSC or CY504, slot box, cable
- External Adapter
  SNMP Adapter Net Agent Mini DY522
  SNMP Adapter CS141BL
  SNMP Adapter with Modbus CS141LM

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

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	PDSP 33400
Output power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300	400
Nominal Active Power (kW	8	12	16	24	32	48	64	80	96	128	160	200	240	320
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**	**PDSP-U33200**
Output power (kva)	5	7,5	10	15	20	30	40	50	60	80	100	125	150	200
Nominal Active Power (kW)	4	6	8	12	16	24	32	40	48	64	80	100	120	160
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) / 1Ph+N+PE (1Ph ver.)													
Voltage (3ph_ Phase to Phase)	380V/400V/415V (PDSP) & 200V / 208V / 220V (PDSP-U) / 220 / 230 /240V (1 ph ver.)													
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&485@ 10 to 120kVA / RS232&422 @ 160 to 400kVA													
Dry Contact Signals (optional)	AC failure, Battery under voltage, bypass operation, output failure													
Others	EPO, Generator interface													
ENVIRONMENT														
Storage Temperature Range (°C)	-25 to +55 (15 to 40 recomended for longer battery life time)													
Operating Temperature Range (°C)	0 to 40 (20 to 25 recomended for longer battery life time)													
Relative Humidity Range	0-95% (non-condensing)													
Maximum Altitude without derating (m)	1000													
Protection Level	IP20													
PHYSICAL SPECIFICATIONS	PDSP 33010 U33005	PDSP 33015 U33007	PDSP 33020 U33010	PDSP 33030 U33015	PDSP 33040 U33020	PDSP 33060 U33030	PDSP 33080 U33040	PDSP 33100 U33050	PDSP 33120 U33060	PDSP 33160 U33080	PDSP 33200 U33100	PDSP 33250 U33125	PDSP 33300 U33150	PDSP 33400 U33200
Dimensions wxdxh (cm)	40 x 78 x 107				52 x 90 x 130		67x73x163		85x78x182	98x87x195		134x108x195		
Weight (kg)	100	114	116	122	180	202	253	285	405	522	570	735	750	800
STANDARDS														
Standards	EN 62040-1-1 (safety), EN 62040-2(EMC), EN 62040-3 (VFI-SS-111)													

(*) 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 ≤ 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 CS141BSC or CY504, slot box, cable
- External Adapter
  SNMP Adapter Net Agent Mini DY 522
  SNMP Adapter CS141BL
  SNMP Adapter with Modbus CS141LM

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)

- BC00, 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&485@ 10 to 120kVA / RS232&422 @ 160 to 300kVA												
Dry Contact Signals (optional)	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 SPECIFICATIONS	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
Dimensions (wxdxh) cm	40 x 78 x 107				52 x 90 x 130		63,5x100x140		76 x 102x 168	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-111)												
(*) for source having THDv < 2 % @ nominal load (**) varies depending on ups power													

Pyramid Plus Series

On-Line "Double Conversion" Technology
3 Phase in – 3 Phase out / 10 to 300kVA

- *On-line "double conversion" technology*
- *State of the art IGBT & PWM technology*
- *Evolution and redundancy guaranteed by Parallel Systems*
- *Reliability of the battery ensured by Info-Charger*
- *Built-in maintenance and static by pass*
- *Built-in output isolation transformer*
- *Comprehensive communication with computer & network systems and SNMP solutions*
- *Communication with building management systems*
- *Expandable battery blocks*
- *12 pulse rectifier options*

Pyramid Plus Series Technical Specifications

MODEL	PPS 310	PPS 315	PPS 320	PPS 330	PPS 340	PPS 360	PPS 380	PPS 3100	PPS 3120	PPS 3160	PPS 3200	PPS 3250	PPS 3300
Output Power (kVA)	10	15	20	30	40	60	80	100	120	160	200	250	300
Output Power (kW)	8	12	16	24	32	48	64	80	96	128	160	200	240
INPUT													
Voltage	380V / 400V 3 Phase												
Tolerance	±15%												
Frequency	50 / 60Hz												
Tolerance	± 5%												
OUTPUT													
Power factor	0.8												
Voltage	380V / 400V 3Phase												
Tolerance (static condition)	± 1%												
Tolerance (dynamic condition)	± 5%												
Harmonic Distortion rate on lineer load	<3%												
Harmonic Distortion rate on non-lineer load	<5%												
Crest factor	3												
Frequency	50 or 60 Hz												
Frequency Tolerance	±0.2%												
Overload	10min.												
100% - 125% load 125% - 150% load	1min.												
Overall Efficiency	≥ 90%												
BATTERY													
Type	Maintenance-free lead acid batteries												
Quantity	30pcs 12V Batteries											32pcs 12V Batteries	
DISPLAY													
LED Display	Line, Battery, Bypass, Inverter, Maintenance switch, output switch indicators												
LCD Display	Load%, Output voltage & frequency, Input and bypass voltages, Battery voltage and current, Temperature, Alarm messages												
COMMUNICATION													
Interface (Communication Ports)	RS232												
Dry Contact Signals	Line Failure, battery low, load on by-pass, emergency stop input												
PHYSICAL SPECIFICATIONS	PPS 310	PPS 315	PPS 320	PPS 330	PPS 340	PPS 360	PPS 380	PPS 3100	PPS 3120	PPS 3160	PPS 3200	PPS 3250	PPS 3300
Weight without battery (kg)	225	255	270	285	400	475	655	815	940	965	1170	1465	1535
Dimensions (cm) WxDxH	49x65x119				56,5x86x140		72x82x145	112x82x165		120x86x173		159x95x190	
ENVIRONMENT													
Audible Noise	<55dBA					<60dBA		<66dBA		<70dBA			
Operating Temperature	0-40°C												
Relative Humidity	0-95% (non condensing)												
Protection Level	IP20												
STANDARDS													
	EN 62040-1-1 (safety), EN 62040-2(EMC)												

Frequency Converter

3 Phase in – 3 Phase out / 10 to 120kVA
50/60/400Hz

- *Double conversion and PWM technology with pure sinewave output,*
- *Microprocessor controller,*
- *Galvanic Isolation,*
- *Efficiency up to 91%,*
- *Emergency close switch connection,*
- *User friendly front panel(5button and LCD indicator), detailed information*
- *availability to do the adjustment of parameters through front panel,*
- *History log of 128 events, calendar and time indicators,*
- *High performance at non-linear loads,*
- *Remote monitoring via network,*
- *SNMP compatibility,*
- *Low input harmonic distortion and increased pf with optional 12p version,*
- *10 Years spare parts supply warranty,*
- *Low installation and operating cost,*

Frequency Converter Technical Specifications

MODEL	FC 3310	FC 3315	FC 3320	FC 3330	FC 340	FC 3360	FC 3380	FC 33100	FC 33120
Output Power kVA	10	15	20	30	40	60	80	100	120
Output Power Kw	8	12	16	24	32	48	64	80	96
Power factor	0.8								
INPUT									
Voltage	400 VAC or 380VAC 3phase , 4Wire + G								
Tolerance	±10%								
Frequency	50 / 60Hz								
Tolerance	±5%								
Power factor	0,8 (with optional 12pulse version :0,95)								
max RFI	EN 50091-2 Class A								
OUTPUT									
Voltage	208VAC, 3Phase, 4Wire+G								
Voltage Stability	static (balanced load) : +/-2%								
	static (unbalanced load) : +/-4%								
	Dynamic (0% - 100%step load) : +/-6%								
Uptum Time	after 0%-100% step load: max 25m sec								
Crest factor	3:1								
Frequency	50 / 60 / 400 Hz on request								
Frequency Tolerance	±0.2%								
Overload 101% - 110% load	1h								
Overload 130% load	10min.								
Overload 150% load	1min.								
Overall Efficiency	up to 91%								
Total Harmonic Distortion	<3% at linear load								
	<5% at non-linear load								
COMMUNICATION									
Interface	RS232 and Dry Contact,								
PHYSICAL									
Weight without battery (kg)	240	255	270	285	490	570	600	750	810
Dimensions (mm) WxDxH	490x650x1190				565x820x1400		720x800x1450	1192x874x1720	
ENVIRONMENT									
Audible Noise	<55dBA					<60dBA		63 to 66dBA	
Operating Temperature	0-40°C								
Relative Humidity (non condensing)	0-95%								
Max. Altitude	<1000m								
Standards	EN 50091-1 (safety), EN 50091-2 (EMC), IEC 62040-3 (class VFI), IP20								

Modulera Series

On-Line "Double Conversion" Modular UPS System
3 phase in / 3phase out 60kVA - 100kVA – 200kVA

- 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 94%)
- Increased Output Power Factor (0.9)
- Unity Input Power Factor (0.99)
- Low Input Total Harmonic Distortion Level (THDi down to 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 (optional)
- Programmable Battery Voltage (32/ 34 / 36 / 38 / 40 blocks of 12V Batteries)
- Three Level Battery Charge system 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)

MODEL		MDL 3300-60K	MDL 3300-100K	MDL 3300-200K
Frame Capacity		20kVA (18kW) to 60kVA (54kW)	20kVA (18kW) to 100kVA (90kW)	20kVA (18kW) to 200kVA (180kW)
MDL Module Capacity		20KVA/18KW		
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		down to 3%		
Generator Input		Present		
OUTPUT				
Phase		3 Phase + Neutral + Ground		
Rated Voltage		380/400/415Vac		
Power Factor		0,9		
Voltage Regulation		±1%		
Frequency	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		
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		
	Bypass Mode	Breaker (40Amp)		
AC-AC Efficiency		Up to 94%		
Eco-Mode Efficiency		97%		
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. (charge current can be set according to battery capacity installed)	30A Max. (charge current can be set according to battery capacity installed)	60A Max. (charge current can be set according to battery capacity installed)
	MDL Module	6A Max. (charge current can be set according to battery capacity installed)		
DISPLAY				
Status LED & LCD		Line Mode, Eco Mode, Bypass Mode, Battery Low, Battery Bad, Overload & UPS Fault		
Reading On the LCD		Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load Percentage, Battery Voltage & 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		1xRS232 Communication port, 2xRS485 Communication ports, 1xModBus port, 2xCommunication Slot		
Optional		SNMP (Megatec Protocol), Dry Contact Board, EPO		
ENVIRONMENT				
Operating Temperature		0°C - 40°C		
Storage Temperature		-25°C - 55°C		
Humidity		0 - %95 non condensing		
Altitude		< 1500m		
Noise		<60dBA (at 1 meter)		
PHYSICAL SPECIFICATIONS				
Dimesions (WxDxH)	MDL Module	443 x 580 x 131- 3U (for all frames)		
	Frame	600x840x1400		600x1100x2000
Weight - Without Batteries (kg)	MDL Module	31		
	Frame	150	152	290
STANDARDS				
CE, EN/IEC 62040-2, EN/IEC 62040-1-1, EN/IEC 62040-3 (VFI SS 111)				

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 NK 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 (135 - 245V (L-N) for Single Phase, 233 - 424V (L-L) for Three Phase)*

Automatic Voltage Regulator Technical Specifications

MODEL	POWER	Dimensions	Weight	Response	Input		Output						ENVIRONMENT		
SINGLE PHASE	(kVA)	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-0201	2	25 x 50 x 29,5	21	80	160-245	10,5A	220/230/240±%2	1 Ph+N	same as input	w/o distortion, no affect on harmonics	≥ 95	7.3A	0-40°C	<45dBA	20-95%
e-0351	3.5	25 x 50 x 29,5	26	80	160-245	19A	220/230/240±%2	1 Ph+N			≥ 96	12,7A	0-40°C	<45dBA	20-95%
e-0501	5	50,5 x 39 x 28,5	37	80	160-245	27A	220/230/240±%2	1 Ph+N			≥ 96	19.4A	0-40°C	<45dBA	20-95%
e-0751	7.5	50,5 x 39 x 28,5	46	80	160-245	39A	220/230/240±%2	1 Ph+N			≥ 96	29A	0-40°C	<45dBA	20-95%
e-1001	10	53,5 x 44,5 x 35	61	80	160-245	53A	220/230/240±%2	1 Ph+N			≥ 96	39A	0-40°C	<45dBA	20-95%
e-1501	15	36,5 x 62 x 64	85	80	160-245	79A	220/230/240±%2	1 Ph+N			≥ 96	58A	0-40°C	<45dBA	20-95%
e-2001	20	49,5 x 73 x 77,5	136	80	160-245	106A	220/230/240±%2	1 Ph+N			≥ 96	74A	0-40°C	<45dBA	20-95%
e-3001	30	49,5 x 73 x 77,5	160	80	160-245	159A	220/230/240±%2	1 Ph+N			≥ 96	111A	0-40°C	<45dBA	20-95%
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	77,5	80	277-424	3x10,5A	380/400/415±%2	3 Ph+N	same as input	w/o distortion, no affect on harmonics	≥ 95	3x7.2A	0-40°C	<50dBA	20-95%
e-1053	10,5	39,5 x 53,5 x 88	90	80	277-424	3x19A	380/400/415±%2	3 Ph+N			≥ 96	3x12,7A	0-40°C	<50dBA	20-95%
e-1503	15	39,5 x 58 x 91,5	130	80	277-424	3x27A	380/400/415±%2	3 Ph+N			≥ 96	3x19.4A	0-40°C	<50dBA	20-95%
e-2253	22,5	39,5 x 58 x 91,5	144	80	277-424	3x39A	380/400/415±%2	3 Ph+N			≥ 96	3x29A	0-40°C	<50dBA	20-95%
e-3003	30	44,5 x 68,5 x 102,5	196	80	277-424	3x53A	380/400/415±%2	3 Ph+N			≥ 97	3x39A	0-40°C	<50dBA	20-95%
e-4503	45	44,5 x 68,5 x 102,5	226	80	277-424	3x79A	380/400/415±%2	3 Ph+N			≥ 97	3x58A	0-40°C	<50dBA	20-95%
e-6003	60	54,5 x 103 x 131,5	360	80	277-424	3x106A	380/400/415±%2	3 Ph+N			≥ 97	3x74A	0-40°C	<50dBA	20-95%
e-7503	75	54,5 x 103 x 131,5	390	80	277-424	3x131A	380/400/415±%2	3 Ph+N			≥ 97	3x91A	0-40°C	<50dBA	20-95%
e-9003	90	54,5 x 103 x 131,5	455	80	277-424	3x158A	380/400/415±%2	3 Ph+N			≥ 97	3x110A	0-40°C	<50dBA	20-95%
e-11003	110	61,5 x 114,5 x 153	486	80	277-424	3x191A	380/400/415±%2	3 Ph+N			≥ 97	3x133A	0-40°C	<50dBA	20-95%
e-12003	120	61,5 x 114,5 x 153	500	80	277-424	3x210A	380/400/415±%2	3 Ph+N			≥ 97	3x146A	0-40°C	<50dBA	20-95%
e-15003	150	61,5 x 114,5 x 153	584	80	277-424	3x265A	380/400/415±%2	3 Ph+N			≥ 97	3x182A	0-40°C	<50dBA	20-95%
e-22003	220	88,5 x 180,5 x 142,5	960	80	277-424	3x387A	380/400/415±%2	3 Ph+N			≥ 97	3x269A	0-40°C	<50dBA	20-95%
e-27003	270	88,5 x 180,5 x 142,5	1200	80	277-424	3x470A	380/400/415±%2	3 Ph+N			≥ 97	3x327A	0-40°C	<50dBA	20-95%
e-36003	360	220,5 x 139,5 x 157,3	2045	80	277-424	3x633A	380/400/415±%2	3 Ph+N			≥ 97	3x438A	0-40°C	<50dBA	20-95%
e-40003	400	110 x 210 x 157	2300	80	277-424	3x688A	380/400/415±%2	3 Ph+N			≥ 97	3x610A	0-40°C	<50dBA	20-95%
e-50003	500	184,5 x 135,5 x 152	2740	80	277-424	3x877A	380/400/415±%2	3 Ph+N			≥ 97	3x610A	0-40°C	<50dBA	20-95%
e-60003	600	250,5 x 151 x 186,5	2910	80	277-424	3x1031A	380/400/415±%2	3Ph + N			≥ 97	3x610A	0-40°C	<50dBA	20-95%
e-80003	800	322,5 x 170 x 163	3600	80	277-424	3x1375A	380/400/415±%2	3Ph + N			≥ 97	3x970A	0-40°C	<50dBA	20-95%
e-100003	1000	322,5 x 170 x 163	3800	80	277-424	3x1758A	380/400/415±%2	3Ph + N			≥ 97	3X1223A	0-40°C	<50dBA	20-95%

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

Inverter Systems

DC / AC Power Supply
1.5 kVA to 10 kVA

- Microprocessor controller
- Rack Mountable Compact structure
- Full sinusoidal output
- High output surge capacity
- Built in output isolation transformer
- Bypass switch (optional)
- Programmable online/offline operation
- Easy control and monitoring via 2x16 character LCD display, status leds & keypad
- RFI Filter at battery input

Accessories

- Bypass switch
- RS232 communication port
- Remote Monitoring Panel
- Dry Contact Board

Static inverter modules convert DC power to sinusoidal 230V AC power, to support your critical equipment in telecom and industrial systems. Inform Inverter offer a continuous and reliable power conversion to the connected devices.
Inform Inverter is designed in a wide range of power and input /output voltage options. With its high inrush capacity, it is very proper solution especially for industrial equipments. Semiconductor devices with latest technology used in Inform inverter series, provides a high efficiency in power conversion.
Inform inverter series take all the advantage of microprocessor control thus smart control and diagnostics are possible. For example, after detecting a short circuit at the output, inverter protects itself, but it will retry to feed your load after a specified time. Many of the operational parameters are programmable by the LCD display and keypad. Moreover, inform inverter offers optional communication interfaces for site monitoring and remote control.

Inverter Systems Technical Specifications

MODEL	INV1524	INV2524	INV2048	INV3048	INV5048	INV20110	INV30110	INV50110	INV100110
Power (VA)	1500	2500	2000	3000	5000	2000	3000	5000	10000
INPUT									
Nominal Voltage	24 VDC		48 VDC			110 VDC			
Voltage Range	20-40 VDC		40-80 VDC			90-140 VDC			
Current (Maximum)	75 Adc	121 Adc	48 Adc	71 Adc	120 Adc	21 Adc	29 Adc	50 Adc	97 Adc
INPUT									
Power Factor	0,75								
Phase Configuration	1Ph + N + PE								
Nominal Voltage (AC)	220V / 230 / 240V (adjustable)								
Output Current	6,5 A	10,8 A	8,7 A	13 A	21,7 A	8,7 A	13 A	21,7 A	43,5 A
Wave Form	Pure Sinewave								
Total Harmonic Distortion at 100% linear load	< 3%								
Frequency	50Hz or 60Hz (adjustable)								
Crest Factor	2,5:1	2:1	3:1	2:1		3:1			
Overload (up to 5 sec)	6 minutes at 101% load - 10 seconds at 125% load								
Total Efficiency	86%					89%	92%		
DISPLAY									
LED Display	Load on Bypass, Load on INVERTER, Alarm								
LCD Display	Load Percentage, Output Voltage, Battery Voltage, Input Voltage, Inverter Frequency, Battery Percentage, Maximum Load Percentage, Synchronization Status, Alarms								
Alarms	Load on Bypass, Overload, Bypass Failure, Output Low / High, Over Temperature, Battery Voltage Too Low / Low / High, Short Circuit / IPM Fault								
PROTECTION									
	Output & Input Fuse, DC Under/Over Voltage, Overload, Short Circuit Fault, Over Temperature								
COMMUNICATION									
Interface (Communication ports)	Optional RS232 port, SNMP, Dry Contact Cards								
ENVIRONMENT									
Operating Temperature	0°C - 40°C								
Storage Temperature	-20°C ~ +70°C								
Humidity	up to 90% (non-condensing)								
Protection Class	IP20								
Operation Altitude	up to 2000 masl								
PHYSICAL SPECIFICATIONS									
Dimensions (mm) (WxDxH) - Rack Version 19"	440x500x222	440x500x222	440x500x222	440x500x222	440x600x222	440x500x222	440x500x222	–	–
Weight (kg) - Rack Version 19"	40	45	40	45	55	40	45	–	–
Dimensions (mm) (WxDxH) - Tower Version	–	–	–	–	–	–	–	500x450x1000	500x450x1000
Weight (kg) - Tower Version	–	–	–	–	–	–	–	110	120
ACCESORIES									
Optional	Remote Monitoring Panel								

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	ICH2450	ICH24100	ICH24200	ICH4850	ICH48100	ICH11025	ICH11050
Power	60Amp	30Amp	15Amp	50Amp	100Amp	200Amp	50Amp	100Amp	25Amp	50Amp
DC Voltage	24VDC	48VDC	110VDC	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	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% - 95%									
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						

Battery Charger

30Amp to 400Amp

- *Microprocessor controlled Thyristor Technology*
- *Built in output transformer topology*
- *Fully Adjustable float, boost and equalizing charge modes with V/I characteristics*
- *Advanced technology for phase control*
- *Very low voltage ripple and extended battery life*
- *High efficiency and low operation cost*
- *Ability to operate as voltage or current source*
- *Wide range of options for monitoring*
- *Improved environmental operation characteristics*
- *Remote monitoring via RS232 communication port*
- *Potential free alarm contacts on extended alarm board*
- *Internal Over Temperature protection*
- *User Friendly Control Panel*

Battery Charger Technical Specifications

DC Voltage	24VDC	48VDC	110VDC	220VDC
INPUT				
Input Phase	3Phase			
Nominal Voltage Range	3x380V or 3x400V ± 15 % – 4 wire			
Frequency Range	47-63Hz			
OUTPUT				
Nominal Voltage	24VDC	48VDC	110VDC	220VDC
Nominal current	30A / 60A / 100A / 200A / 400A			
Max Output Current	110% of Inominal			
Float Charge Adjustment Range	80% - 115% of the nominal output voltage			
Boost Charge Voltage	80% - 125% of the nominal output voltage			
Equalizing Charge Adjustment Range	80% - 125% of the nominal output voltage			
Current Limit Adjustment Range	25% - 100% of the nominal output voltage			
Voltage Ripple	< 1% (with or without battery)			
Voltage Regulation	< 1% (10% to 100% load)			
Efficiency	80%		90%	
DISPLAY				
LCD Display Panel	Voltage, Current, Charge and Status Informations			
LED Display Panel	Line, Operation, Fault Indications			
GENERAL				
Charger Mode	Automatic / Manual U-I Characteristic			
Charger Type	Float / Boost / Equalizing Charge			
Cooling	Forced Cooling with Thermic Controlled Fan			
Input/Output Connections	Terminals			
Fuses	Semiconductor Type			
ENVIRONMENT				
Operating Temperature	-5 – +50 °C			
Relative Humidity	0% - 95%			
Protection Class	IP 20 (Higher IP Class is optional)			
STANDARDS				
Standards	89/336/EEC (EMC); 62040-1, 62040-2, 62040-3, IEC 950, IEC 439, IEC 146			
OPTIONS				
Dry Contact Card	4pcs contact alarms / normally(closed/open)			
Parallel Connection	Available			
Others	Earth Leakage Monitoring, Dc Supply & Battery Monitoring, Gauges, Load Voltage Limitation Module / Voltage Drop, Battery Charge Temperature Compensation			

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 (Synchronized)	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	0-95%	
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-syncronised 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, S1 /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							

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 µA 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-107-V.4)*
- *ILT-107-V.4 is a multi-functional device produced for electrical control at Isolation Systems. The following parameters can be observed with ILT-107-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 parameterisable 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 µA 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 Uk < % 3 condition.*
- *No Load Condition Current shall comply the Io < % 3 ondition.*
- *The Initial Current value shall be less then 8In*

Battery Cabinet Type	UPS Range	Capacity												Cabinet dimensions			
	Cabinet	7 AH.	12 AH.	18 AH.	25 AH.	40 AH.	55 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	48	32	32	32	8			1566	386	1166	80
	BC 55				78	78	84	38	38	38	30			1497	496	1800	143
	BC 60			90	100	80	120	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	34							525	880	1310	64
	V 33						68	35	35	35				835	1160	1310	143
	V 34				93	78	92							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
BC Cabinet (DSP multipower)	MPBC	20	20											425	563	222	16
V type DSP Multipower Cabinet	MPBC-V	20												445	677	131.9	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

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- ABB - SWEDEN
- AGUSTA WESTLAND – ITALY
- AKZO NOBEL - PAKISTAN
- AIRPORT AUHORITY OF INDIA
- ALBARAK BANK – SOUTH AFRICA
- ALCATEL - PORTUGAL
- ALPHA MEDICAL – FRANCE
- AMALGAMATED HEALTH CARE SOUTH AFRICA
- ALVARVE UNIVERSITY - PORTUGAL
- ANGOLA AIRPORT – ANGOLA
- ATATURK AIRPORT - TURKEY
- AUCHAN SUPERSTORES - ITALY
- AZERCELL - AZERBAIJAN
- BANGLALINK-BANGLADESH
- BANK OF GUINEA-GUINEA
- BANK AL HABIB-PAKISTAN
- BANQUE B.C.P – FRANCE
- BARILLA - ITALY
- BARWON PRISON-AUSTRALIA
- BASHKORTOSTANA TV - RUSSIA
- BATUMI AIRPORT- GEORGIA
- BAUER - GERMANY
- BLOEMFONTEIN INT AIRPORT- SOUTH AFRICA
- BOUYGUES TELECOM – FRANCE
- CAMARA MUNICIPAL DE FAFE PORTUGAL
- CANCER HOSPITAL-BANGLADESH
- CARREFOUR - TURKEY
- CARREFOUR- ITALY
- CARREFOUR - BRASIL
- CASINO DE SAINT PAIR – FRANCE
- CEGELEC - GERMANY
- CENTRE HOSPITALIER D'ARGENTAN FRANCE
- CENTRAL HOSPITAL - RUSSIA
- CENTRO HOSPITALAR COVA DA BEIRA – PORTUGAL
- CHAMBRE D'AGRICULTURE DES DEUX SEVRES – FRANCE
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- CHINABANK -KAZAKHSTAN
- CLINIQUE LA SOLANE - FRANCE
- COIMBRA CENTRO- PORTUGAL
- COLGATE PALMOLIVE -PAKISTAN
- COLOPLAST- HUNGARY
- COMMERCIAL & INDUSTRIAL CHAMBER OF SALONIKA-GREECE
- CONSOL SPECIALITY GLASS SOUTH AFRICA
- COSCOM-UZBEKISTAN
- CUSTOMS POLICE- ROMANIA
- CREDIT EUROPE BANK - RUSSIA
- CSKA STADIUM- RUSSIA
- DAIMLER CHRYSLER-GERMANY
- DANONE - FRANCE
- DELTA STATE GOVERNMENT NIGERIA
- DENEL AEROSPACE – SOUTH AFRICA
- DHL MALAYSIA- MALAYSIA
- EKO FM - NIGERIA
- ERICSSON - TURKEY
- ERICSSON-GERMANY
- ERCAN AIRPORT - CYPRUS
- EXPRESS HIGHWAY - S.KOREA
- ESIA BAKRIE TELECOM INDONESIA
- ESSILOR – SOUTH AFRICA
- EFG EUROBANK –GREECE
- FAISALABAD AIRPORT - PAKISTAN
- FARO AIRPORT - PORTUGAL
- FNB BANK - S.AFRICA
- FIDELITY BANK PLC - NIGERIA
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- GILGIT AIRPORT - PAKISTAN
- GLAXO KLINE-AUSTRALIA
- GLOBE TELECOM-PHILIPPINES
- GREAT ORMOND ST HOSPITAL-UK
- H&K-TAIWAN
- HANKOOK TIRE - HUNGARY
- HIRSCHMANN ELEK - HUNGARY
- HOME CREDIT&FINANCE BANK RUSSSIA
- HOSPITAL LOCAL DE BAUME-LES-DAMES -FRANCE
- HOSPITAL DE AVEIRO – PORTUGAL
- HOSPITAL DE BELLVITGE-SPAIN
- HOSPITAL DE BENIDORM-SPAIN
- HOTEL ST. JOSEPH, KARLOVY VARY CZECH REPUBLIC
- IKEA-UK
- IKEA - RUSSIA
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- INCREDIBANK -RUSSIA
- INDOSAT-INDONESİA
- INOX - INDIA
- INTERTEK -HONG KONG
- INTERCONTINENTAL BANK PLC NIGERIA
- IRIT UNIVERSITY - FRANCE
- IS BANK - TURKEY
- ISTANBUL LRT-BOMBARDIER TURKEY
- ISP TAIWAN
- ISLAMABAD AIRPORT - PAKISTAN
- JSC-RUSSIA
- KARACHI AIRPORT - PAKISTAN
- K MOBILE GSM-KAZAKHSTAN
- KAUFLAND - POLAND
- KAZAK TELECOM – KAZAKHSTAN
- KCEL -KAZAKHSTAN
- KIA MOTORS - S.KOREA
- KING SHAKA INT AIRPORT – SOUTH AFRICA
- KNAUF GIBS – RUSSIA
- KOREAN TELECOM - S.KOREA
- KWAIT PETROLEUM-ITALY
- LAGOS TELEVISION - NIGERIA
- LAUSANNE METRO- SWITZERLAND
- LEICESTER MERCURY NEWSP-UK
- LG - S.KOREA
- MARZ - GERMANY
- MEGA CENTER- RUSSIA
- MELO MEDICAL – SOUTH AFRICA
- MEMORIAL HOSPITAL - PAKISTAN
- MEWAH OILS SDN BHD - MALAYSIA
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- MIDDLESEX UNIVERSITY-UK
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- MOTOROLA-HONG KONG
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- POLICE STATIONS - POLAND
- POLISH ARMY - POLAND
- POST OFFICES - POLAND
- POST & TELECOM-INDONESIA
- PORTUGAL TELECOM - PORTUGAL
- PRINCE SULTAN CARDIAC HOSPITAL-SAUDI ARABIA
- PT TELECOM-INDONESIA
- PWC-BULGARIA
- QUALITY CINE LABS - INDIA
- RADIOTELEOPTIKI NEAPOLIS-GREECE
- RED CROSS - PROTUGAL
- RENAULT - FRANCE
- RESERVE BANK OF INDIA
- REUTERS - GERMANY
- RIKSBYGGEN-SWEDEN
- ROCA SANITARIOS-SPAIN
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- SABYA HOSPITAL – S. ARABIA
- ALMOSAM HOSPITAL – S. ARABIA
- AL RAYTH HOSPITAL – S. ARABIA

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