Energy uninterrupted



CATALOG 2019

Elsist designs and develops

since 1978

Elsist designs and develops high technology products for power electronics market since 1978 and is leader in designing uninterruptible power supplies. Elsist offers a wide range of products based on state-of-art technology.

The main configuration of the systems is based on the control of input sinusoidal waveform, allowing

the reduction of input harmonic distortion (THDi) below 3%, with an efficiency higher than 95% in normal operation and higher than 98% in Power-Save condition.

Elsist also develops custom solutions suitable for special applications.





Why an UPS?

The whole world, and mainly our industrial societies, today depend on energy sources and base their development on availability of electricity to ensure the functioning of industrial equipment, public or private infrastructures, street lighting, offices, hospitals, houses and so on. Unfortunately, even today, the quality and stability of the power networks are a problem. Voltage interruptions and various disturbances - such as short and long-term interruptions, voltage dips, fluctuations in the effective value of the voltage, deviation of the frequency with respect to its nominal value, dissimilarity of the three-phase voltage, overvoltages and transient phenomena, harmonic distortion and inter-harmonic - may happen very often and can create significant problems, both to the equipment supplied by electricity distribution networks, and to lost time and to service interruptions caused by such disturbances, with the additional risk of data and important files losses.

Today more than ever, the speed of transmission and availability of data and services are fundamental resources. The suspension of work or service because of these drawbacks involves a very high cost, and the return to normal operations must be reduced to a minimum time, or even to zero.

Important equipment such as IT systems, data centers, servers, company networks, production chains, storage systems, industrial automation, video surveillance and security in general, hospital equipment, railway or air management networks, etc. if not protected can frequently be affected by disturbances that compromise the proper functioning. Providing these critical users with adequate protection means, in addition to protect their goods and services, avoiding monetary costs and ensuring quality of work and continuous availability of data.

Main blocks on a UPS

RECTIFIER	it converts the AC input voltage into an intermediate DC voltage and charges the battery
INVERTER	it converts the intermediate DC voltage into a filtered AC voltage to the load
BATTERIES SET	they store energy when mains is present. when input source is lost they supply the load for certain amount of time

Technical term	Symbol	Description
Volt	\vee	Voltage
Ampere	A	Current
Power Factor	Cos φ	Phase shift angle between voltage and current
Watt	W	Real power (Volt x Ampere x Cos φ)
Voltampere	VA	Apparent power (Volt x Ampere if single phase
		Volt x Ampere x $\sqrt{3}$ if three-phase)
Frequency	Hz	Number of cycles per second
Crest Factor	CF	Ratio between peak current and effective current (lpk/leff)
Autonomy time	minute	UPS runtime when supplied by the battery



UPS operation

LINE INTERACTIVE SERIES

Our UPS Line Interactive range assures safe and cost-effective reliability. We are pleased to recommend you Line Interactive series for all Small Office and Home users, because they represent the best price / quality ratio. Elsist take care of this product range giving great importance to design , simple appearance, user friendly interface, ease of installation for perfect integration into any type of environment.

In normal operation, the load is fed by the network through an Automatic Voltage Regulator (AVR). This circuit corrects network variations, stabilizing them within certain values. When such variations exceed AVR circuit regulation capability, battery is activated to ensure continuity of proper operation.



ON-LINE DOUBLE CONVERSION SERIES

Elsist UPS with on-line technology are characterized by zero time intervention, which means the load protection without interruption of the supply and with the same waveform (perfectly sinusoidal), as well as with network operation and with battery operation. In fact, a fully sine-wave voltage is perfectly reconstructed over all time. On-Line Technology models are suitable for protecting Servers, Data Center, Storage Systems, Automation, Video Surveillance, Security systems and others. ON-LINE technology can provide total protection not only for black-out but also for all the variations in voltage and frequency that silently attack our users every day.

Since 1976, Elsist has largely devoted his production to this UPS technology with expandable autonomies, hence with over-sized integrated rectifiers, in order to support additional battery modules (for business continuity). These series are also dedicated to manufacturing plant, electro-medical devices and general safety.

Elsist ON-LINE series offer also integrated shutdown software, targeted for more critical computing applications such as Servers and Data Networks. The reliability of these series is the feature on which Elsist keep focus: the total protection of applications in order to forget the risk of electrical power inconveniences.





UNINTERRUPTIBLE POWER SUPPLIES



Electrical disturbance

Sometimes we experience electrical disturbances on the mains such as voltage fluctuations, spikes, flickering, blackouts that can disturb the correct operation of our systems or even cause them damages. There are various kind of electrical disturbances. Hereafter, we're listing the most common ones:



SAGS a sudden decrease of input voltage for a short time. **BROWNOUTS** are steady decrease of input voltage for a long time. The load is still supplied but at a voltage below its tolerances.



BLACKOUTS no power at all, in this condition the load is not supplied



SPIKES a sudden and very large increase in the voltage level. Quite dangerous for the load



SURGES a sudden increase in the voltage level above the normal level, usually more than 20ms



NOISE voltage disturbances generated by magnetic field interference (EMI) or by radio frequency interference (RFI)



OVER VOLTAGE an increase of input voltage for a long period of time. The load is still supplied with a voltage above its tolerances. A dangerous condition for the load.



 $\ensuremath{\text{HARMONICS}}$ a distortion of the voltage waveform



FREQUENCY FLUCTUATION a frequency variation

UNINTERRUPTIBLE POWER SUPPLIES ELSIST

Innovative Energy

For an eco-fiendly sustainability because Elsist is focused on energy saving, selling high efficiency products. An environmentally-friendly approach is one of our main goals since design stage, in order to sustain a clean energy development.





Technical Service

Elsist provides a 360-degree service

S Elsist provides its customers with a complete technical assistance and a preventive maintenance support. Different types of Service contract are available, to allow customers to select the most suitable one for their applications. Today Elsist may offer a 24 hours a day monitoring system, handled by its service center in Milan. With this particular service contract, named "Safety", we provide a full time control of the device, by checking its operation in real time and set-up onsite intervention for problem solving whenever necessary. After sales service of Elsist is granted by a team of top trained technicians to ensure the best support for your installations.



System installation consultancy



Checking of the environment for Standard&Norms compliance



Fast support within 24 hours



«Safety Intelligent» contract for a 24 hours a day support



Special selling conditions for battery replacement



Special selling conditions on spare parts



Customized Service contract, also multi-brand







Special prices on labor cost



«Full» contract allows a free of-charge replacement

UNINTERRUPTIBLE POWER SUPPLIES ELSIST

Applications

Market Segments Elsist products are used in various critical applications with full

customers satisfaction





Oil&Gas









Power Generation











UNINTERRUPTIBLE POWER SUPPLIES ELSIST

Choosing the most suitable UPS

Home SOHO **POS System**

Office **IT Segment** Banks

Telecom Data Center Industrial Banks Railway

Emergency **Systems**

Special **Products**



HOME550



NEMO2.0



MISSION

PURE





MISSION



UPSERVER2.0









POLARIS



LION



LION

UPS MODEM



TRI-ONE





SIRIUS



POLARIS PSS



TRI-ONE TMSS



POLARIS SWB





NAUTILUS











POLARIS

UNINTERRUPTIBLE POWER SUPPLIES

Products Range

Elsist may offer a product range including standard and custom devices for both single-phase and three-phase environment.

UPS Single-Phase

Single-Phase UPS from 550VA up to 10kVA with either line interactive or on-line double conversion technology. New models with Li-Ion battery. UPS Modem.



UPS Three-Phase input / Single-phase output from 8kVA to 20kVA.

UPS Three-Phase

Standard UPS Three-Phase from 10kVA up to 800kVA, with parallel operation capability up to 8 cabinets

UPS Three-Phase Modular Special Products

UPS Single-phase from 1kVA to 3kVA at 110Vac output UL Recognized Three-Phase UPS for Switchboard

Stabilizers

Switches Static switches Single-Phase and Three-Phase

Central Power Supply Systems CPSS Single-Phase and Three-Phase for emergency lighting

CPSS Single-Phase and Three-Phase for emergency lighting compliant with EN 50171 standard





Sealed Lead-acid, maintenance free. Li-Ion.







MULTISTATION

Line interactive single-phase UPS

Multistation is a Line-interactive technology device with pseudo-sinusoidal waveform and a short transfer time. Thanks to its compact design, this equipment is mainly designed for domestic multimedia or small office applications.

It provides complete surge protection for critical loads, which are connected directly to protected sockets through the UPS.

MAIN FEATURES

- · Microprocessor control for a higher reliability.
- · AVR function (Automatic Voltage Regulation).
- · Green Power function for energy saving.
- \cdot Cold Start.
- · Autorestart function upon returning of Mains.
- · Light and compact.
- · 3 schuko outlets protected against power outages + 3 schuko outlets filtered.
- · Overload protection



MultiStation 1000

Code

MULTISTATION 1000

Technical Requirements

Power	1000 VA / 600 w
Input Voltage	230 Vac ± 27%
Input Frequency	50/60 Hz ± 5%
Output Voltage	230 Vac ±10% (±5% without mains)
Output Frequency	50/60 Hz ± 1%
Autonomy time	10'
Battery	sealed, maintenance-free lead-acid
Output Outlets	3 protected by UPS – 3 filtered and protected against voltage fluctuations
Modem/T port (10BaseT/100BaseT)	RJ11 (2 wires, single line) or RJ45 (compatible network)
USB charger	USB output to recharge external device
Display LEDs	standard
Dimensions and Weight	
Dimensions (WxHxD) mm	202x91x290
Weight UPS standard with battery kg	5.4



UNINTERRUPTIBLE POWER SUPPLIES **UPS MODEM**



It is a UPS specifically designed to protect modems and avoid network connection interruptions.

MAIN FEATURES

DC UPS

- · Universal Input Voltage
- · Five DC output interfaces
- · Microprocessor-based for intelligent control
- · Cold start function
- \cdot Auto-restart while AC is recovering
- · Wall-mount design
- · USB charger
- · Designed to support: phone cable, Wireless local loop, Fiber to Home, Fiber to Curb, Integrated Access Devices, Voice over IP, Voice over DSL

UPSmodem

Code	UPS MODEM						
Technical Requirements							
Capacity		50 W					
Input							
Input Voltage		230 Va	 C				
Voltage Range		85-264 V	ac				
Frequency Range		50-60 H	lz				
Output							
Output Socket	DC socket*1	DC socket*2	POE*2	USB*1			
Output Voltage	9Vdc	12Vdc	15/24Vdc	5Vdc			
Output power¤t	9W/1A	12W/1A	24W or 15W/1A	5W/1A			
Iransfer Lime		Oms					
Battery							
Battery Voltage		12V/7Ah	*1				
Trained Decharge Times		0.7A	000/				
	6-	8 nours recover to	90% capacity				
AC Mode		Solid groop L EF	liabting				
Battery Mode		Solid green LEE) lighting				
Fault		Solid green LLL	ahtina				
Protection			<u></u>				
Full Protection	Short circuit. Ove	rload. Overcharge	and overdischarge pr	rotection			
Alarm							
Battery Mode		Sounding every 1	0 seconds				
Low Battery		Sounding every 0	.5 seconds				
Fault		Continuosly so	ounding				
Dimension							
Approx. Dimension DxWxH (mm)		235x83x2	206				
Approx. Net Weight (kg)		3.2					
Operating Environment							
Humidity	0-	9 %@0-40° C (Noi	n-condensing)				
Management							
Communication port		N/A					



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HOME 550

Line interactive single-phase UPS

HOME 550 is a line interactive UPS with modified sine wave. It is an effective and economical choice to protect critical loads in SOHO environment, such as PCs, monitor, fax machine, decoder, modem and so on.

MAIN FEATURES

- ·Microprocessor control for a high reliability.
- $\cdot \mathsf{Full}$ power protection
- Green Power function for energy saving.
- ·Cold Start.
- ·Auto-restart function upon returning of Mains.
- $\cdot \text{Light}$ weight and compact dimensions.
- ·Overload protection.



Home 550

Code		HOME 550	
Technical Requirements			
Power		550 VA / 300 W	
Input Voltage		230 Vac ± 27%	
Input Frequency		50/60 Hz ± 5%	
Output Voltage		230 Vac ±10% (±5% without mains)	
Output Frequency		50/60 Hz ± 1%	
Autonomy time		10'	
Battery		sealed, maintenance-free lead-acid	
Output Outlets		1ѕснико	
Dimensions and Weight			
Dimensione (WxHxD)	mm	101x142x298	
Standard weight including battery	kg	3,9	



UNINTERRUPTIBLE POWER SUPPLIES

NEMO 2.0

Line interactive single-phase UPS

NEMO 2.0 series is a line interactive UPS that has a simulated sinewave output. It prevents impulse, surge, sag and power outage situations.

Provide your printers, workstations, PCs and other IT applications with reliable protection against data loss using NEMO 2.0 series of uninterruptible power supplies.

- · AVR boost and buck
- \cdot Cold start function
- · Smart RS232/USB interface for power management
- · Built-in self-diagnostic function
- · Modem/LAN internet protection
- · Compatible with generator
- LCD or LED panel for option
- Fastest charging capacity
- · Auto charging at off mode
- · Auto-restart function



Code	NEMO 2.0 65	NEMO 2.0 80	NEMO 2.0 120	NEMO 2.0 160	NEMO 2.0 200	NEMO 2.0 300	NEMO 2.0 400
Technical Requirements							
Power rating VA/W	650/330	800/400	1200/600	1600/800	2000/1000	3000/1500	4000/2000
Input Voltage			23	30 Vac ± 27	<u>%</u>		
Input Frequency			5(0/60 Hz ± 5°	<u>%</u>		
Output Voltage		2	30 Vac ±109	<u>% (±5% with</u>	<u>out mains)_</u>		
Output Frequency			50)/60 Hz ± 1	<u>%</u>		
Autonomy Time				10'			
Battery Type			Pb sealed	, maintenano	ce-free		
Output Outlets	2IEC	2IEC	4IEC	। ⊥	21E0	с,2scнико	
Modem/T port (10BaseT/100BaseT)		RJ11 (2 w	ires, single li	ne) or RJ45	(network cor	npatibility)	
USB Interface				yes			
LCD Display				yes			
Dimensions and Weight							
Dimensions (WxHxD)mm	101x142x298	101x142x298	101x142x298	149x162x353	158x198x380	_1 <u>58x198x380</u> _	145x213x436
Weight with battery kg	3,9	4,4	4,7	8,4	10	11,4	23





SINEWAVE

SINUSOIDAL



Single-phase, Line interactive UPS with sinusoidal waveform

Pure series is a line interactive UPS with a fully sinusoidal waveform at the output and a short intervention time, available at 1kVA, 2kVA, 3kVA power level.

MAIN FEATURES

- \cdot AVR boost and buck
- · Smart microprocessor control design
- \cdot Cold start function
- · Smart RS232/USB interface for power management
- · Built-in self-diagnostic function
- \cdot Modem/LAN internet protection
- · Compatible with generator
- · LCD display
- · Fastest charging capacity
- Auto charging at off mode
 Auto-restart function



PURE 2000

PURE 1000

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Technical Characteristics

Code

Power Rating	1000VA / 800W	2000VA / 1600W	3000VA / 2400W								
Input Voltage		208/220/230/240 VAC	;								
Input Voltage Range		160-290 VAC									
Frequency Range		50/60 Hz (Auto sensing)									
Output Voltage		208/220/230/240 VAC	;								
AC Voltage Regulation (Batt. M	ode)	±3% (before battery alar	<u>n)</u>								
Harmonic Distortion	3%@100%	linear load, 5%@100% r	ion linear load								
Waveform (Batt. Mode)		Pure Sinewave									
Transfer Time		Typical 6 ms, 10ms may	Κ								
Efficiency		97% Normal mode									
	85% Battery mode	86% Battery mode	86% Battery mode								
Battery Type & Number	12 V / 9 Ah x 2	12 V / 9 Ah x 4	12 V / 9 Ah x 6								
Typical Recharge Time	5 h	nours recover to 90% cap	bacity								
Full Protection	Overload, output sh	ortcircuit, discharge, and	overcharge protection								
LCD Display	AC mode,batt. mode,buck bo	ost mode,batt. level,load	level, overload, fault and low batt.								
USB & smart RS-232 Port	Supports Windows® 2000/2	2003/XP/Vista/2008, Win	dows® 7/10, Linux, Unix,MAC								
Alarm											
Battery Mode		Sounding every 10 secon	ds								
Low Battery		Sounding every second	1								
Overload		Sounding every 0.5 seco	nd								
Fault		Continuously sounding									
Dimensions and Weight											
Dimension, W x H x D	mm 144x265x400	191x337x468	191x337x468								
Humidity	0-90% F	RH@0-40degC (No conde	ensazione)								
Noise Level		<45									



UNINTERRUPTIBLE POWER SUPPLIES MISSION

MISSION UPS

True On-line UPS Double Conversion Single Phase 1kVA-10kVA

Mission series is an On-line double conversion UPS with DSP technology (Digital Signal Processor).

MAIN FEATURES:

· High input and output PF

- \cdot Wide input voltage range (energy saving)
- · Eco Mode (Economic operation mode)
- · Back feed protection and Surge
- \cdot Protection
- · Auto self test
- · Cold Start
- · Parallel operation capability
- Output By-pass
 Additional battery pack
- \cdot USB
- · EPO
- \cdot Software included
- · Intelligent Slot SNMP board (optional)
- · Dry contact (optional)



Code

MISSION 1 KVA MISSION 2 KVA MISSION 3 KVA MISSION 6 KVA MISSION 10 KVA

In	n	. et
	Ρ	uι

Input								
Power		1KVA/0,9KW	2KVA/1,8KW	3KVA/2,7KW	6KVA/5,4KW	10KVA/9KW		
Input line		Single phase + Ground						
Input voltage		11	5±5VAC-295±5	VAC	220VAC/230	VAC/240VAC		
Input frequency		45-55H	lz @ 50/55HZ 6	5Hz @ 60HZ	50/60 Hz auto	sensing		
Power factor			≥ 0.98		≥ 0.80 (input	THDV ≤1%)		
Output								
Output line				Single phase + 0	Ground			
Output voltage			220/2	230/240VAC selec	table			
Output frequency				50/60 Hz				
Power factor				0.9				
Voltage tollerance			±2%			±1%		
Switching time			1	Vain Battery = 0	ms			
Output THD		≤ 3%	(100% linear loa	d)	¦ ≤ 2% (100%	b linear load)		
Batteries								
Quantity		2	44	6	16/18/20 bl	ocks		
Batteries			Mainter	nance-free, Sealed	l lead acid			
Back up time				10'				
Dimensions and Weight								
Dimensions (WxHxD)	mm	144x215x368	191x339x469	191x339x469	250x616x502	250x616x502		
Weight kg	_kg _	10,5	21,6	26,2	62	64		
Display				LCD+LED				
Colour				black				











MISSION MT - CEI 0-16 / CEI 0-21 Single-phase CPSS compliant with CEI 0-16 - CEI 0-21

MISSION MT series is an equipment specifically designed to provide power to all ancillary circuits in a Medium Voltage substation for at least 60 minutes. It also keep an energy storage in case of long black-out due to maintenance or severe failures on the mains.

- · On-Line double conversion technology
- · Sinusoidal waveform
- \cdot UPS on battery signal
- · Energy storage



Code	MISSION MT	MISSION MT	MISSION MT	MISSION MT	MISSION MT
Input	IKVA	2KVA	3KVA	6KVA	10KVA
Power	1KVA/0,9KW	2KVA/1,8KW	3KVA/2,7KW	6KVA/5,4KW	10KVA/8KW
Input			Single-phase + g	nd	
Input Voltage	11	5±5VAC-295±5	6VAC	220VAC/230	OVAC/240VAC
Input Frequency	45-55	Hz @ 50/55HZ 6	65Hz @ 60HZ	50/60 Hz auto	o select
Power Factor		≥ 0.98		≥ 0.80 (input	t THDV ≤1%)
Output					
Output			Single-phase + g	nd	
Output Voltage		220,	/230/240VAC sele	ctable	
Output Frequency			50/60 Hz		
Power Factor			0.9		
Output voltage		±2%			<u>±1%</u>
Switching time		N	/lains Battery = (Oms	
Output voltage distortion	≤ 3%	(100% linear loa	ıd)	≤ 2% (100%	6 linear load)
Batteries					
Battery type		mainte	nance-free, sealed	l lead-acid	
Autonomy time		60' for auxiliary l	oads of medium vo	oltage power statio	on
Dimensions and Weight					
Dimensions (WxHxD) mm	144x215x368	191x339x469	191x339x469	250x616x502	250x616x502
Weight UPS standard with batt. kg	10,5	21,6	26,2	62	64
Display			LCD+LED		
Color			black		
Standards EN	I/IEC 60950-1 E	N/IEC 62040-1	EN/IEC 62040-2 E	N/IEC 62040-3 CE	EL 0-16 CEL 0-21



CENTRAL POWER SUPPLY SYSTEM

MISSION MSS - EN50171

Single-phase CPSS for energizing safety equipment in compliance with EN50171

Mission MSS series is designed to be compliant with EN50171 standard.

Main applications are:

- Centralized emergency lighting systems
- Automatic fire extinguishing installations
- Paging systems and signalling safety installations
- Smoke extraction equipment
- Carbon monoxide warning systems
- Specific safety installations related to specific buildings, e.g. high-risk areas.

Our "Elsist Battery Control" system allows the right operation in case of mains outages, checking the conditions of every battery pack. The battery charger is designed to recharge the batteries at 80% of total capacity in less than 8 hours.

Autonomy times may be 1, 2 or 3 hours at nominal load, according to the condition specified by EN50171 standard.

- · High overload capability
- · Reverse voltage battery protection
- \cdot High recharging current
- · 10 years battery lifetime
- · RS232-RS485 interfaces
- \cdot Relay card with clean contacts for remote alarms

Code	MISSION MMS	MISSION MMS	MISSION MMS	MISSION MMS	MISSION MMS
	IKVA	ZRVA	SKVA	UNVA	IURVA
Input					
Power	1KVA/0,9KW	2KVA/1,8KW	3KVA/2,7KW	6KVA/5,4KW	10KVA/9KW
Power according to EN50171	0,75KW	1,50KW	2,25KW	4,50KW	7,50KW
Input		S	single-phase + gno	d	
Input Voltage	11	5±5VAC-295±5V	AC	220VAC/230	VAC/240VAC
Input Frequency	45-55H	Iz @ 50/55HZ 65	Hz @ 60HZ	50/60 Hz auto	select
Power Factor		≥ 0.98		≥ 0.80 (input	THDV ≤1%)
Output					
Output		 S	single-phase + gno	d	
Output Voltage		220/23	30/240VAC select	able	
Output Frequency			50/60 Hz		
Power Factor			0.9		
Voltage tolerance		±2%		 	±1%
Switching time		M	lains Battery = (Dms	
Output voltage distortion	≤ 3%	(100% linear load))	L ≤ 2% (100%	linear load)
Batteries					
Battery type		maintenar	nce-free, sealed le	ad-acid	
Autonomy time			60'- 90' - 120'		
Dimensions and Weight					
Dimensions (WxHxD) mi	m 144x215x368	191x339x469	191x339x469	250x616x502	250x616x502
Weight UPS standard with batt. keep	10,5	21,6	26,2	62	64
Display			LCD+LED		
Battery			black		
Standards	EN/IEC 6095	0-1 EN/IEC 6204	0-1 EN/IEC 62040)-2 EN/IEC 62040)-3 EN 50171









MISSION CF

Single-phase Frequency converter 6K-10K

SINGLE-PHASE 50/60Hz FREQUENCY CONVERTER - MISSION TOWER SERIES

50/60Hz Frequency converter at 6kVA and 10kVA with VFI sinusoidal waveform (Voltage and Frequency Independent).

Frequency converter supply a linear current and a complete protection to:

- Data Network/PC
- Data center
- Server
- Telecommunication system
- Hospital equipment
- Industrial equipment

The Frequency converter provides an output at 50Hz or 60Hz which is independent from input frequency. The Power Factor correction circuit improves the quality of absorbed input current, thus increasing the efficiency and saving energy

MAIN FEATURES:

- \cdot High PF at input and at output
- · Wide input range (energy saving)
- · Monitoring and self-test at switch-on
- · USB port
- · EPO contact
- · Software included

Code	MISSION CF 6KVA	MISSION CF 10KVA	
Input			
Power	6KVA/5,4KW	10KVA/9KW	
Input	Single-p	hase + gnd	
Input Voltage	220VAC/23	0VAC/240VAC	
Input Frequency	50/60 H	z auto slect	
Power Factor	≥ 0.80 (input	THDV ≤1%)	
Output			
Output	Single-p	hase + gnd	
Output Voltage	220/230/240\	/AC selezionabile	
Output Frequency	50/	60 Hz	
Power Factor		0.8	
Voltage tolerance	±	1%	
Output voltage distortion	<u>≤ 2% (100%</u>	linear load)	
Dimensions and Weight			
Dimensions (WxHxD) mm	250x616x502	250x616x502	
Weight UPS standard with batt. kg	6262	64	
Display	LC)+LED	
Color	k	plack	

MISSION series of Frequency converter is equipped with a LCD display showing all parameters (more than 50 items). Moreover, it is possible to set the base configurations directly on the display



UPSERVER 2.0

Rack-Tower on-line, double conversion UPS at 2kVA

UPSERVER 2.0 series is an On-line , double conversion UPS to protect server and data center. It may be configured either in rack or tower version .

- \cdot True on-line double conversion technology
- · Utility frequency independent
- Three segment charging mode to increase battery lifetime
- Selectable High Efficiency mode of operation
- \cdot Cold Start
- \cdot Power Shedding function to increase back-up time
- · Additional battery pack for longer autonomy
- · USB and RS232 communication ports
- \cdot LCD display
- \cdot EPO port
- · Rack/Tower convertible
- \cdot Hot swappable battery features on rack solution
- \cdot Intelligent Slot SNMP board (optional)
- \cdot Dry contact (optional)



Code	UPServer 2.0
Input	
Power	2KVA/1,35KW
Input line	Single-phase + ground
Input voltage	110V - 290V
Input frequency	50Hz - 60Hz +/- 10% (autodetect)
Power factor	0,98
Output	
Output	Single-phase + ground
Output Voltage	200Vac - 240Vac (configurable)
Output Frequency	50Hz - 60Hz (sync mains)
Power Factor	0,7
Output voltage	1%
Switching time	Zero
Output voltage distortion	Thd < 3%
Batteries	
Number of batteries	2
Battery type	12V 9Ah (standard) Maintenance-free, sealed lead-acid
Autonomy time	10' (expandable)
Dimensions and Weight	
Dimensions (WxHxD) m	n 440x86,5x430
Weight UPS k	15,1
Display	LCD + LED
Color	black



FLEXIBLE

FLEXIBLE

Rack-Tower on-line, double conversion UPS at 1kVA - 3kVA

Flexible series is an On-line , double conversion UPS to protect server and data center. It may be configured either in rack or tower version .

- \cdot True on-line double conversion technology
- · Reduced depth
- · High Power Factor (model at 1,5kVA has PF 1,0)
- · Utility frequency independent
- \cdot Three segment charging mode to increase battery lifetime
- · Selectable High Efficiency mode of operation
- \cdot Cold Start
- \cdot Power Shedding function to increase back-up time
- \cdot Additional battery pack for longer autonomy
- · USB and RS232 communication ports
- · LCD display
- · EPO port
- · Rack/Tower convertible
- \cdot Hot swappable battery features on rack solution
- Intelligent Slot SNMP board (optional)
- · Dry contact (optional)





Code	Flexible1000	Flexible1500	Flexible3000
Input			
Power	1kVA/0,9kW	1,5kVA/1,5kW	3kVA/2,7kW
Input line		Single-phase + ground	
Input voltage		110V - 290V	
Input frequency		50Hz - 60Hz +/- 10% (autodetect)	
Power factor		0,98	
Output			
Output		Single-phase + ground	
Output Voltage		200Vac - 240Vac (configurable)	
Output Frequency		50Hz - 60Hz (sync mains)	
Power Factor	0,9	1	0,9
Output voltage		1%	
Switching time		Zero	
Output voltage distortion		Thd < 3%	
Batteries			
Number of batteries	2	3	6
Battery type	12V 9Ah (standard)	12V 7Ah (standard)	12V 7Ah (standard)
Autonomy time		10' (expandable)	
Dimensions and Weight			
Dimensions (WxHxD)	mm 440x86,5x430	440x86,5x430	440x131x520
Weight UPS	kg 15,1	18	26
Display		LCD + LED	
Color		black	



FLEXIBLE

Rack-Tower, on-line, double conversion UPS at 6kVA - 10kVA

- \cdot True on-line double conversion technology
- \cdot Reduced depth
- High Power Factor (model at 1,5kVA has PF 1,0)
- · Utility frequency independent
- Three segment charging mode to increase battery lifetime
- \cdot Selectable High Efficiency mode of operation
- · Cold Start
- \cdot Power Shedding function to increase back-up time
- Additional battery pack for longer autonomy
 USB and RS232 communication ports
- · LCD display
- · EPO port
- \cdot Rack/Tower convertible
- Hot swappable battery features on rack solution
 Intelligent Slot SNMP board (optional)
- · Dry contact (optional)



Code	Flexible6000		Flexible10000
Input			
Power	6kVA/5,4kW		10kVA/9kW
Input line		Single-phase with GND connection	
Input voltage		220/230/240Vac (L+N+GND)	
Input frequency		45-55Hz / 54-66Hz ±0,5Hz	
Power factor		≥0.99	
Harmonic distortion		≤3% (100% linear load)	
THDi			
Output			
Output Voltage		220/230/240Vac	
Output Frequency		50-60Hz (sync mains)	
Power Factor		0.9	
Voltage regulation		±2%	
Switching time		zero	
Output Voltage distortion THDv		≤2% with linear load	
Waveform		sinusoidal	
Efficiency		>93,5%	
Batteries			
Battery Voltage		±96/±108/±120Vdc	
Type of battery		Sealed lead-acid, no maintenance	
Recharge time (typ.)		6-8 hours	
Charging current		10A max	
Communication			
Communication interface	USB, RS:	232, Parallel port, SNMP/ Relay card (opti	onal)
General Characteristics			
Operating temperature		0 - 40°C	
Humidity		0 95% no condensing	
Altitude		<1500m	
Noise		<55dB	
Dimensions and Weight			
Dimensions (WxHxD)		440x131x480mm	
Net weight	23kg		25kg
Safety		IEC/EN62040-1 IEC/EN60950-1	
EMC	EN62040-2	2, IEC61000-4-2, IEC61000-4-3, IEC6100	00-4-4,
	IECe	1000-4-5, IEC61000-4-6, IEC61000-4-8	



LION

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0S((



With Li-Ion battery

Is the new generation of small power UPS, on-line double conversion with single phase I/O and 0.9 output power factor. High efficiency and Li-ion battery for saving power and reduce maintenance costs.

MAIN FEATURES

ION

- · On-line double conversion technology
- · Output power factor: 0.9
- Wide input voltage range (110V-300Vac)
 Input Power factor 0.99 (with PFC)
- · Li-ion battery equipped
- · Standard model: charging current either 1A or 2A
- · Long run unit: charging current 10A max.
- · Long run unit: charging current can be set by display
- · Intelligent charging mode for optimizing battery performance
- · LCD display
- \cdot EPO function
- \cdot ECO mode operation for energy saving
- · Genset compatible
- · Intelligent management: RS232 + USB + SNMP
- · Power shedding



- ·	
Codo	
OUUE	

LION1000

LION2000

LION3000

Dower			2000//4/2200/4/		
	100004/90000	ingle phase with grou			
Nominal Valtage		1191e priase with grou	10 		
	20 150)/00.0r.110.200)/02.00	00/200/220/230/2401	/80		
Vollage range 55	~ 150Vac or 110~300Vac @	00% 10au, 80~ 145 va	ac or 160~300vac @ 100% load		
Frequency range		40~70HZ	00/		
Power Factor	≥ 0.99	@ nominal voltage(100	U% 10ad)		
Generator Input		supported			
Output	S	ingle phase with grou	nd		
Voltage	2()0/208/220/230/240\	/ac		
Power Factor		0.9			
Voltage Regulation		±1%			
Frequency	47~53Hz or 57~63Hz (syı	nchronized range) - (5	0/60±0.1)Hz Battery mode		
Harmonic distortion (THDv)	≤2% THD (Line	ear load); ≤4% THD (Non-linear load)		
Waveform		Pure Sinewave			
Tranfer time	zero in AC mode <->Batt.	Mode; 4ms(Typical) ir	n Inverter <-> Bypass mode		
Efficiency		91% (AC mode)	92% (AC mode)		
	>96% (E	CO mode)	>97% (ECO mode)		
Battery					
Battery type	38.4V 6Ah	48V 9Ah	76.8V 9Ah		
Back-up time (full load)	~8min	~8min	~8min		
Charging time	~ 3 hours	~ 5 hours	~ 5 hours		
Charging current	1A or 2A	1A or 2A	1A or 2A		
Environment					
Communication Interface	USB, RS232	2, SNMP card, Relay of	card(optional)		
Operating temperature		0~40°C			
Storage temperature		-25°C ~ 55°C			
Humidity range	20~90%	RH @ 0~40°C (Non-ce	ondensing)		
Altitude		<1500m			
Noise level	Less than 50dBA at 1 Meter				
Standards					
Safety	IEC/E	EN62040-1,IEC/EN60	950-1		
EMC	IEC/EN62040-2,IEC	C61000-4-2,IEC61000)-4-3,IEC61000-4-4,		
	IEC61000-	4-5,IEC61000-4-6,IEC	C61000-4-8		



TRI-ONE UPS

Three-phase in / Single-phase out on-line UPS

Tri-One series is a three-phase in and single-phase out tower-mounted adopting leading DSP online double conversion technology. Flexible battery quantity configuration, flexible redundancy design, compatibility to genset greatly increase the availability of UPS. This series UPS is widely used in small and medium IDC machine room, control center, industry process control fields and so on.

TRI-ONE 10

TRI-ONE 15

TRI-ONE 20

MAIN FEATURES

- \cdot N+X parallel redundancy
- \cdot Online double conversion with DSP control
- · Input current harmonic: <5%
- Optimization battery group, the quantity of battery: 16/18/20 pieces
- Wide input voltage range: 208~478Vac
- · Wide input frequency range(50Hz: 45~55Hz / 60Hz: 54~66Hz)
- · Support generator input
- \cdot Support economic (ECO) operation mode
- · Self-testing when UPS startup
- · Options: SNMP card/Relay card/Parallel board
- · Cold start

Code

Technical characteristics

Power		10kVA/9kW	15kVA/13,5kW	20kVA/18kW		
Input Voltage	Vac		208 – 478			
Input Frequency	Hz		45-65			
Phase			Three-phase			
THD current			< 2% linear load			
Power Factor		da 0.	99 a 100% with linear lo	bad		
Output Voltage Vac	Vac		230 ±1%			
Output Power (possibility to increase cosphi)	Hz		50/60			
Output Frequency			Sinusoidal THD <2%			
Frequency Tolerance		±	0.2Hz (without mains)			
Switching time			0 ms			
Overload capability		150% per 10 s	sec. Before switching to	By-pass		
Efficiency		AC – AC ir	n normal operation > 96	%		
Batteries						
Туре		Main	tenance-free, sealed lea	d-acid		
Typ. autonomy time			10 minutes			
Cold Start			Yes			
Voltage	Vdc		240			
Recharge time			4 - 6 hours			
General Characteristics						
Noise			<50 dB ad 1 m			
Operating Temperature	0°C ~ 40°C electronis (batteries 18°C ~ 25°C)					
Humidity		fino al 90% without condensing				
Operating Altitude	up to 3000 slm					
Mechanical Characteristics						
Connection with external battery cabinet			Plug-in & Play			
Output outlet			Terminal blocks			
Protection						
Input			Breaker			
Output		Cur	rrent protection threshol	d		
Battery			Fuse / Breaker			
By-pass overload	Up to 200% for 500 sec. then output switch Off					
Minumum Battery Voltage	Audible alarm then Inverter off					
Dimensions and Weight						
Dmensions (WxHxD)	mm	250x655x597	250x616x502 *	250x616x502 *		
Weight UPS	kg	76	45 + 80	48+80		
Safety						
Safety Standard compliance		EN	50091-1, cUL, 62040-3	}		
EMC Standard	EN50091-2, EN61000-3-3, EN61000-3-2, FCC Classe A					
* (L battany cabinat)						







TRI-ONE TMSS - EN50171

CPSS for energizing safety equipment in compliance with EN50171

Tri-One TMSS series is designed to be compliant with EN50171 standard.

Main applications are:

- Centralized emergency lighting systems
- Automatic fire extinguishing installations
- Paging systems and signalling safety installations
- Smoke extraction equipment
- Carbon monoxide warning systems
- Specific safety installations related to specific buildings, e.g. high-risk areas.

Our "Elsist Battery Control" system allows the right operation in case of mains outages, checking the conditions of every battery pack. The battery charger is designed to recharge the batteries at 80% of total capacity in less than 8 hours.

Autonomy times may be 1, 2 or 3 hours at nominal load, according to the condition specified by EN50171 standard.

Code	TRI-ONE TMSS 10 TRI-ONE TMSS 15 TRI-ONE TMSS 20	
Technical requirements		
Power	10kVA/8kW 15kVA/12kW 20kVA/16kW	
Input Voltage Vac	208 – 478	
Input Frequency Hz	45-65	
Input	Three-phase	
THD current	< 2% with mains	
Power Factor	da 0.99 a 100% without mains	
Output Voltage Vac	230 ±1%	
Output Power (according to EN50171)	7,5kW 11,3kW 15kW	
Output Frequency Hz	50/60	
Waveform Sinusoidal	Sinusoidal THD <2%	
Frequency Stability	±0.2Hz (without mains)	
Switching time	0 ms	
Overload	150% per 10 sec. before switching to By-pass	
Efficiency	AC – AC in normal operation > 96%	
Batteries		
Туре	maintenance-free, sealed lead-acid	
Autonomy time (typ)	10 minutes	
Cold Start	yes	
Battery Voltage Vdc	240	
Recharge time	quick recharge up to 8 hours	
General Characteristics		
Noise	<50 dB at 1 m	
Operating Temperature	0°C ~ 40°C electronics (battery 18°C ~ 25°C)	
Humidity	up to 90% without condensing	
Altitude	up to 3000m	
Mechanical		
External battery cabinet connection	Plug-in & Play	
Outlet	lerminal blocks	
Protection		
	Breaker	
Output	Electronic limit of current	
Battery	Fuse / Breaker	
Overload By-pass	Sino al 200% per 500 sec. poi toglie l'uscita	
Dimensions and Weight		
Dimensions (WxHxD) mm	250x655x597 250x616x502 ^ 250x616x502 ^	
weight UPS + battery kg	/6 45 + 80 48+80	
Safety		
Satety standard	EN50091-1, cUL, 62040-3	
EMC	EN50091-2, EN61000-3-3, EN61000-3-2, FCC Classe A	
* (+ hatten/ cabinet)		



FREQUENCY CONVERTER TRI-ONE CF

TRI-ONE CF

Three-phase/Single-phase Frequency converter at 10kVA-15kVA-20kVA

THREE-PHASE/SINGLE-PHASE FREQUENCY CONVERTER 50/60Hz - TRI-ONE TOWER SERIES

50/60Hz Frequency converter at 6kVA and 10kVA with VFI sinusoidal waveform (Voltage and Frequency Independent).

Frequency converter supply a linear current and a complete protection to:

- Data Network/PC
- Data center
- Server
- Telecommunication system
- Hospital equipment
- Industrial equipment

The Frequency converter provides an output at 50Hz or 60Hz which is independent from input frequency. The Power Factor correction circuit improves the quality of absorbed input current, thus increasing the efficiency and saving energy.

Code		TRI-ONE CF 10	TRI-ONE CF 15	TRI-ONE CF 20	
Technical Characteristics					
Power		10kVA/9kW	15kVA/13,5kW	20kVA/18kW	
Input Voltage	Vac		208 - 478		
Input Frequency	Hz		45-65		
Input			Three-phase		
THD current			< 2% with linear load		
Power Factor		from ().99 to 100% with linear	load	
Output Voltage	Vac		230 ±1%		
Output Frequency	Hz		50/60		
Waveform Sinusoidal			Sinusoidal THD <2%		
Frequency Stability			±0.2Hz (without mains)		
Overload		150% per 1	0 sec. before switching t	o By-pass	
Efficiency		AC – A	C in normal operation >	96%	
General Characteristics					
Noise			<50 dB ad 1 m		
Operating temperature	0°C ~ 40°C electronic (batteries 18°C ~ 25°C)				
Humidity	up to 90% without condensing				
Altitude	up to 3000 m				
Mechanical					
External battery cabinet connection			Plug-In & Play		
			Ierminal blocks		
Protection					
			Breaker		
Output	Electronic limit of current				
Minimum battery voltage		Audible	Alarm. Then Inverter shu	<u>itdown</u>	
Dimensions and Weight					
Dimensions (WxHxD)	<u>mm</u>	250x655x597	250x616x502	_250x616x502	
Weight UPS + battery	<u>kg</u>		45 + 80	48+80	
Safety standard					
			1000 2 2 ENG1000 2 C		
		EINDUUGI-Z, EINC	1000-3-3, EIND1000-3-2	c, FOO Glasse A	
Main abaractoristica.					

Main characteristics:

- High PF at input and at output

- Wide input range (energy saving)

- Monitoring and self-test at switch-on

- USB port

- EPO contact

- Software included

TRI-ONE series of Frequency converter is equipped with a LCD display showing all parameters (more than 50 items). Moreover, it is possible to set the base configurations directly on the display





POLARIS

Three-phase on-line, double conversion UPS at 10kVA-350kVA

POLARIS is a true on-line double conversion system with high efficiency and three-phase Input/Output voltage. The series is High performance and high efficiency with PF 0,9 and PF 1. Polaris uses power modular technology and it works in redundancy mode N+x.

Polaris can be used for any kind of load: IT Network, automatic machine, data center, hospital, industry, railway, etc.

MAIN FEATURES

- \cdot On-line double conversion
- \cdot Output transfer time is 0ms
- · PFC technology
- · Full digital control(DSP)
- Output power factor: 0.9 or 1.0
- Input current harmonic: <3%
 Support cooperatio (ECO) onc
- Support economic (ECO) operation mode
 Optimization battery group, the quantity of battery
- Optimization battery group, the quantity of batter
- Wide input voltage range: 208~478Vac
 Wide input frequency range: 40~70Hz
- Cold start
- · Communication port: USB, RS232, RS485, Parallel port, Dry contact
- · Options: SNMP card/Relay card and MODBUS
- · LCD/LED double display
- · Intelligent charging management
- \cdot EPO function
- · Common battery group
- \cdot The output can meet 100% unbalanced load
- · Parallel operation for modularity and scalability
- \cdot Conformal coating (option)





Polaris 3-phase 10k-350k



UNINTERRUPTIBLE POWER SUPPLIES

Modular power technology

Modular power technology used for POLARIS serie is an easy "Parallel concept".

POLARIS serie has an intelligent sensor which automatically detects other UPSs with same power. No settings via software, no parallel boards needed, UPS it is always ready and with a self test reset and adjust its output power.

Parallel control cables are shielded with double isolation to avoid noise interference. The cables are connected in ring mode, as shown in the picture below. Ring connection is very reliable.



The parallel configuration guarantees an higher reliability than a single "full power" UPS. For making a correct configuration it is important to meet the items written below:

1) Every UPS must have the same power and connected to the same by-pass line .

2) The electric cables (input, output, by-pass) must have the same length and same characteristics







Three-phase on-line, double conversion UPS at 10K-350K

MODEL POWER	POLARIS10 10KVA/10KW	POLARIS15 15KVA/15KW	POLARIS20 20KVA/20KW	POLARIS30 30KVA/30KW	
Input Voltage Frequency Power Factor THDI	Three-phase + N Vac 380-400-415 45 - 60 Hz (auto sensing) 0,99 < 2%				
Output Voltage Frequency Power Factor THDy Efficiency	1	Three-pt 380-400 45 - 60 Hz 1 < 1% (linear load) - <3% > 97,5%	ase + N -415 Vac (+/- 0,1%) 1 6 (non linear load) > 97,5%	1	
Battery Autonomy		Dyamic 16pcs - 18pcs 10' standard with em	20pcs. (configurable) ibedded battery		
Switching time Overload Self-check	Normal op	0 n .: 110% 60' - 125% 10' - Automatic self t	ns. 150% 1' - >150% switch 1	to bypass	
Display	LCD: Vo	oltage IN/OUT - Frequency Operating Temp Ove	/ IN/OUT - Load - Battery rload - Failure - Alarms	Voltage	
Interface Communication Operating temperature	USB -	SNMP (optional) - R Operating: 0° + 40° /	Intelligent slot - MODBUS ELAY card (optional) Storage: -25° + 55°	<u>3 485</u>	
Dimensions (WxHxD)	250x868x828 mm 1	250x868x828 mm 1	250x868x828 mm 1	250x868x828 mm 1	

MODEL	POLARIS40	POLARIS60	POLARIS80	POLARIS100		
POWER	40KVA/40KW	60KVA/60kW	80KVA/72KW	100KVA/100KW		
Input	Three-phase + N					
Voltage	Vac 380-400-415					
Frequency	45 - 60 Hz (auto sensing)					
Power Factor	0,99					
THDi	< 2%					
Output Voltage Frequency Power Factor THDy Efficiency	1	Three 380-4 45 - 60 1 < 1% (linear load) - > 97,5%	e-phase + N 400-415 Vac Hz (+/- 0,1%) 0,9 <3% (non linear load) > 97,5%	1 > 97,5%		
Battery	Dynamic 16pcs - 18pcs 20pcs. (configurable)					
Autonomy	10' standard with embedded battery					
Switching time Overload Self-check	Norma	al op.: 110% 60' - 125% 10 Automatic s	0 ms. 0' - <u>150% 1' - >150% swit</u> elf test at switch on	ch to bypass		
Display	LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp Overload - Failure - Alarms					
Interface	USB - RS485 - Clean Contacts- Intelligent slot - MODBUS 485					
Communication	SNMP (optional) - RELAY card (optional)					
Operating temperature	Operating: 0° + 40° / Storage: -25° + 55°					
Dimensions (WxHxD)	250x868x828 mm	250x868x828 mm	250x868x828 mm	750x868x828 mm		
Number of Units	1	1	1	3		



UNINTERRUPTIBLE POWER SUPPLIES

POLARIS UPS

Three-phase on-line, double conversion UPS at 10K-350K

MODEL POWER	POLARIS120 120KVA/120KW	POLARIS160 160KVA/144KW	POLARIS180 180KVA/180KW	POLARIS200 200KVA/180KW		
Input Voltage Frequency Power Factor THDi	Three-phase + N Vac_380-400-415 45 - 60 Hz (auto sensing) 0,99 < 2%					
Output Voltage Frequency Power Factor THDy Efficiency	1 > 97,5%	Three- 380-40 45 - 60 F 0,9 < 1% (linear load) - > 97,5%	phase + N 0-415 Vac Iz (+/- 0,1%) 	<u>0,9</u> > 97,5%		
Battery Autonomy	Dynamic 16pcs - 18pcs 20pcs. (configurable) 10' standard with embedded battery					
Switching time Overload Self-check	Normal op	C - 110% 60' - 125% 10' Automatic seli) ms. 150% 1' - >150% switch to f test at switch on	bypass		
Display Interface Communication	LCD: \ USB	/oltage IN/OUT - Frequen Operating Temp Ov - RS485 - Clean Contact SNMP (optional) -	cy IN/OUT - Load - Battery \ verload - Failure - Alarms ts- Intelligent slot - MODBUS RELAY card (optional)	/oltage 3 485		
Operating temperature Dimensions (WxHxD) Number of Units	500x868x828 mm 2	Operating: 0° + 40' 500x868x828 mm 2	° / Storage: -25° + 55° 750x868x828 mm 3	750x868x828 mm 3		





Input Three-phase + N Voltage Vac 380-400-415 Frequency 45 - 60 Hz (auto sensing) Power Factor 0,9 0,9 0,9 THDi <2% Output Three-phase + N Voltage 380-400-415 Vac Frequency 45 - 60 Hz (+/- 0,1%) Power Factor Power Factor Three-phase + N Voltage Output Three-phase + N Voltage 380-400-415 Vac Frequency 45 - 60 Hz (+/- 0,1%) Power Factor Power Factor THDy <1% (linear load) - <3% (non linear load) Efficiency >97,5% Battery Dynamic 16pcs - 18pcs 20pcs. (configurable) Autonomy 10' standard with embedded battery Switching time 0 ms. Overload 0 ms. Self-check Normal op.: 110% 60' - 125% 10' - 150% 1' - >150% switch to bypass Automatic self test at switch on Display LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp Overload - Failure - Alarms Interface USB - RS485 - Clean Contacts - Inte	POWER	POLARIS250 250kVA / 240kW	POLARIS300 300kVA / 288kW	POLARIS320 320kVA / 288kW	POLARIS350 350kVA / 288kW		
Output Three-phase + N Voltage 380-400-415 Vac Frequency 45 - 60 Hz (+/- 0,1%) Power Factor THDv THDv <1% (linear load) - <3% (non linear load)	Input Voltage Frequency Power Factor THDi	0,9	Three- Vac 38 45 - 60 Hz 0,9 (ohase + N 0-400-415 (auto sensing)),99 0,9 2%	0,8		
Battery Dynamic 16pcs - 18pcs 20pcs. (configurable) Autonomy 10' standard with embedded battery Switching time 0 ms. Overload 0 ms. Self-check Normal op.: 110% 60' - 125% 10' - 150% 1' - >150% switch to bypass Automatic self test at switch on Display LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp Overload - Failure - Alarms Interface USB - RS485 - Clean Contacts- Intelligent slot - MODBUS 485	Output Voltage Frequency Power Factor THDy Efficiency		Three- 380-40 45 - 60 < 1% (linear load)- >9	ohase + N 0-415 Vac Iz (+/- 0,1%) <3% (non linear load) 7,5%			
Switching time 0 ms. Overload 0 ms. Self-check Normal op.: 110% 60' - 125% 10' - 150% 1' - >150% switch to bypass Automatic self test at switch on Display LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp Overload - Failure - Alarms Interface USB - RS485 - Clean Contacts- Intelligent slot - MODBUS 485	Battery Autonomy	Dynamic 16pcs - 18pcs 20pcs. (configurable) 10' standard with embedded battery					
Display LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp Overload - Failure - Alarms Interface USB - RS485 - Clean Contacts - Intelligent slot - MODBUS 485	Switching time Overload Self-check	Normal o	0 - 110% 60' - 125% 10' - Automatic self	ms. 150% 1' - >150% switch t test at switch on	io bypass		
Interface USB - RS485 - Clean Contacts- Intelligent slot - MODBUS 485	Display	LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage Operating Temp - Overload - Failure - Alarms					
Communication SNMP (optional) - RELAY card (optional) Operating temperature Operating: 0° + 40° / Storage: -25° + 55° Dimensions (WxHxD) 750x868x828 1000x868x828 1000x868x828 1000x868x828 Number of Units 3 4 4	Interface Communication Operating temperature Dimensions (WxHxD) Number of Units	Operating Temp Overload - Failure - Alarms USB - RS485 - Clean Contacts - Intelligent slot - MODBUS 485 SNMP (optional) - RELAY card (optional) Operating: 0° + 40° / Storage: -25° + 55° 750x868x828 1000x868x828 1000x868x828 3 4 4					

NOTE: MODEL AT HIGHER OUTPUT POWER UPON REQUEST





POLARIS PSS - EN50171

CPSS for energizing safety equipment in compliance with EN50171

MODEL POWER	POLARIS10PSS 10KVA/9KW	POLARIS15PSS 15KVA/13,5KW	POLARIS20PSS 20KVA/18KW
POWER according to EN50171	7,5KW	11,3KW	15KW
Input		Three-phase + N	
Voltage		Vac 380-400-415	
Frequency		45 - 60 Hz (auto sensing)	
Power Factor		0,99	
THDi		< 2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
THDv		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 96,5%	> 97,5%	> 97,5%
Battery		Dynamic 16pcs - 18pcs 20pcs. (configurable)	
Autonomy		60 / 120 / 180 min	
Switching time		according to EN50171	
Overload	Normal op.:	110% 60' - 125% 10' - 150% 1' - >150% switch to b	ypass
Self testing		Automatic self test at switch on	
Display	LCD: Volta	age IN/OUT - Frequency IN/OUT - Load - Battery Volta	age
		Operating Temp Overload - Failure - Alarms	
		USB - RS485 - Clean Contacts - Intelligent slot	
Communication	SNMI	P (optional) - MODBUS (optional) - RELAY card (option	nal)
Operating temperature_	250v969v929 mm	- Operal(ng; 0' + 40' / Slorage; -20' + 50' - 20' + 50' + 50' - 20' + 50' +	050v060v000 mm
DIMENSIONS (WXHXD)			
Standarda			0 EN 50474
Stanuarus	EIN/IEC 60950-1	EIN/IEC 62040-1 EIN/IEC 62040-2 EIN/IEC 62040	-3 EN 50171

MODEL POWER	POLARIS30PSS 30KVA/27KW	POLARIS40PSS 40KVA/36KW	POLARIS60PSS 60KVA/54kW
POWER according to EN50171	22,5KW	30KW	45KW
Input		Three-phase + N	
Voltage		Vac 380-400-415	
Frequency		45 - 60 Hz (auto sensing)	
Power_Factor		0,99	
THDi		< 2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
THDV		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 97,5%	> 97,5%	> 97,5%
Battery	ynamic16/18/20pcs	Dynamic 32/34/36/38/40pcs	Dynamic16/18/20pcs
Autonomy		60 / 120 / 180 min	
Switching time			
		according to ENSUT/ I	
Overload			
Self testing		Automatic self test at switch on	
Display	LCD: Voltag	e IN/OUT - Frequency IN/OUT - Load - Battery V	/oltage
		Operating Temp Overload - Failure - Alarms	
Interface		USB - RS485 - Clean Contacts - Intelligent slot	
Communication	SNMP	(optional) - MODBUS (optional) - RELAY card (op	tional)
Operating temperature)	Operating: 0° + 40° / Storage: -25° + 55°	
Dimensions (WxHxD)	250x868x828 mm	250x868x828 mm	250x868x828 mm
Number of Units	1	1	1
Standards	EN/IEC 60950-1	EN/IEC 62040-1 EN/IEC 62040-2 EN/IEC 620	040-3 EN 50171



CENTRAL POWER SUPPLY SYSTEM POLARIS PSS

POLARIS PSS - EN50171

CPSS for energizing safety equipment in compliance with EN50171

MODEL	POLARIS80PSS	POLARIS120PSS			
POWER	80KVA/72KW	100KVA/81KW	120KVA/108KW		
POWER according to	60KW	75KW	90KW		
		Three-phase + N			
		380-400-415 \/ac			
- voitage		45_60 Hz (auto sonsing)			
_ Frequency					
Power Factor					
		280,400,415,1/00			
voitage		45 60 H= (1/ 0.1%)			
_ Frequency		43 - 00 HZ (+/- 0, 170)			
_ <u>IHDV</u>		< 1% (III lear 10au) - <3% (IIOH III lear 10au)			
_ Efficiency	> 97,5%	> 97,5%	> 97,5%		
Battery	Dynamic 32/34/36/38/40pcs	Dynamic6/18/20pcs	Dynamic 32/34/36/38/40pcs		
Autonomy		60 / 120 / 180 min			
Switching time		according to EN50171			
Overload	Normal op: 1	1 <u>0% 60' - 125% 10' - 150% 1' - >150% s</u> v	witch to bypass		
Self testing		Automatic self test at switch on			
Display	LCD: Voltage	LCD: Voltage IN/OUT - Frequency IN/OUT - Load - Battery Voltage			
	Õ	perating Temp Overload - Failure - Alarn	ns		
Interface		JSB - RS485 - Clean Contacts- Intelligent	slot		
Communication	SNMP (SNMP (optional) - MODBUS (optional) - RELAY card (optional)			
Operating temperature	Э	Operating: 0° + 40° / Storage: -25° + 55	5°		
Dimensions (WxHxD)	250x868x828 mm	750x868x828 mm	500x868x828 mm		
Number of Units	1	3	2		
Standards	EN/IEC 60950-1	EN/IEC 62040-1 EN/IEC 62040-2 EN/IE	EC 62040-3 EN 50171		

MODEL POWER	POLARIS160PSS 160KVA/144KW	POLARIS180PSS 180KVA/144KW	POLARIS200PSS 200KVA/160KW
POWER according to EN50171	120KW	135KW	150KW
Input		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (auto sensing)	
Power Factor		0,99	
THDi		<2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
Power factor	0,9	0,8	0,8
THDV		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 97,5%	> 97,5%	> 97,5%
Battery		Dynamic 32/34/36/38/40pcs	
Autonomy		60 / 120 / 180 min	
Switching time		according to EN50171	
Overload	Normal op	: 110% 60' - 125% 10' - 150% 1' - >150% swit	tch to bypass
Self testing		Automatic self test at switch on	
Display	LCD: Vo	Itage IN/OUT - Frequency IN/OUT - Load - Batt	tery Voltage
		Operating Temp Overload - Failure - Alarms	S
Interface		USB - RS485 - Clean Contacts- Intelligent slo	ot
Communication	SNMF	P (optional) - MODBUS (optional) - RELAY card	(optional)
Operating temperature		Operating: 0° + 40° / Storage: -25° + 55°	
Dimensions (WxHxD)	500x868x828 mm	750x868x828 mm	750x868x828 mm
Number of Units	2	3	3
Standards	EN/IEC 60950-1	EN/IEC 62040-1 EN/IEC 62040-2 EN/IEC 6	62040-3 EN 50171



POLARIS CF

Three-phase Frequency Converter at 10K-200K

THREE-PHASE/SINGLE-PHASE FREQUENCY CONVERTER 50/60Hz - POLARIS SERIES

50/60Hz Frequency converter at 6kVA and 10kVA with VFI sinusoidal waveform (Voltage and Frequency Independent).

Frequency converter supply a linear current and a complete protection to:

- Data Network/PC

- Data center

- Server

- Telecommunication system

- Hospital equipment

- Industrial equipment

The Frequency converter provides an output at 50Hz or 60Hz which is independent from input frequency. The Power Factor correction circuit improves the quality of absorbed input current, thus increasing the efficiency and saving energy

MODEL POWER	POLARIS CF 10 10KVA/9KW	POLARIS CF 15 15KVA/13,5KW	POLARIS CF 20 20KVA/18KW
Input		Three-phase + N 380-400-415 Vac	
Frequency		45 - 60 Hz (auto sensing)	
_Power_Factor			
Output		Three-phase + N	
Voltage		380-400-415 Vac 45 - 60 Hz (+/- 0.1%)	
Power Factor	0,9	0,9	0,9
_THDy	> 96.5%	< 1% (linear load) - <3% (non linear load) > 97.5%	> 97.5%
Overload	Normal op:	110% 60' - 125% 10' - 150% 1' - >150% switch	n to bypass
_ <u>Self_lest</u>	LCD: Volta	age IN/OUT - Frequency IN/OUT - Load - Batter	y Voltage
		Operating Temp Overload - Failure - Alarms	
Interface Communication	SNMP (optional) - MODBUS (optional) - RELAY card (o	 ptional)
Temperature		Operating: 0° + 40° / Storage: -25° + 55°	
Dimensions (WxHxD)	250x868x828 mm	250x868x828 mm	250x868x828 mm
IN. of units	1	1	1

MODEL POWER	POLARIS CF 30 30KVA/27KW	POLARIS CF 40 40KVA/36KW	POLARIS CF 60 60KVA/54kW
Input		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (auto sensing)	
Power Factor		0,99	
THDi		<_2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
Power Factor	0,9	0,9	0,9
THDV		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 97,5%	> 97,5%	> 97,5%
Overload	Normal op: 1	110% 60' - 125% 10' - 150% 1' - >150% swite	h to bypass
Self Test		Automatic self test at switch on	
Display	LCD: Volta	ige IN/OUT - Frequency IN/OUT - Load - Batte	ery Voltage
		Operating Temp Overload - Failure - Alarms	
		USB - RS485 - Clean Contacts- Intelligent slot	
		optional) - MODBUS (optional) - RELAY card (o	optional)
		Operating: $0^\circ + 40^\circ$ / Storage: $-25^\circ + 55^\circ$	
Dimensions (WxHxD)	250x868x828 mm	250x868x828 mm	250x868x828 mm
IN. of units	1	1	1



FREQUENCY CONVERTER POLARIS CF

POLARIS CF

Three-phase Frequency Converter at 10K-200K

MODEL POWER	POLARIS CF 80 80KVA/72KW	POLARIS CF 100 100KVA/81KW	POLARIS CF 120 120KVA/108KW
Input		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (auto sensing)	
Power Factor		0,99	
THDi		< 2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
Power Factor	0,9	0,8	0,9
THDV		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 97,5%	> 97,5%	> 97,5%
Overload	Normal op:	110% 60' - 125% 10' - 150% 1' - >150% switch to	bypass
Self Test		Automatic self test at switch on	
Display	LCD: Volta	age IN/OUT - Frequency IN/OUT - Load - Battery Vo	oltage
		Operating Temp Overload - Failure - Alarms	
Interface		USB - RS485 - Clean Contacts- Intelligent slot	
Communication	SNMP (optional) - MODBUS (optional) - RELAY card (option	nal)
Temperature		Operating: 0° + 40° / Storage: -25° + 55°	
Dimensions (WxHxD)	250x868x828 mm	750x868x828 mm	500x868x828 mm
N. of units	1	3	2



MODEL POWER	POLARIS CF 160 160KVA/144KW	POLARIS CF 180 180KVA/144KW	POLARIS CF 200 200KVA/160KW
_Input		Three-phase + N	
Voltage			
Frequency		45 - 60 Hz (auto sensing)	
Power Factor		0,99	
		< 2%	
Output		Three-phase + N	
Voltage		380-400-415 Vac	
Frequency		45 - 60 Hz (+/- 0,1%)	
Power Factor	0,9	0,8	0,8
_THDv		< 1% (linear load) - <3% (non linear load)	
Efficiency	> 97,5%	> 97,5%	> 97,5%
Overload	Normal op: 1	110% 60' - 125% 10' - 150% 1' - >150% switch to b	ypass
Self Test		Automatic self test at switch on	
Display	LCD: Volta	ge IN/OUT - Frequency IN/OUT - Load - Battery Vol	tage
		Operating Temp Overload - Failure - Alarms	0
Interface		JSB - RS485 - Clean Contacts- Intelligent slot	
Communication	SNMP (optional) - MODBUS (optional) - RELAY card (optional	al)
Temperature		Operating: 0° + 40° / Storage: -25° + 55°	
Dimensions (WxHxD)	500x868x828 mm	750x868x828 mm	750x86 <u>8</u> x828 mm
N. of units	2	3	3





NAUTILUS

Three-phase on-line, double conversion UPS at 10KVA - 2,4MVA

Nautilus is a true modular system with on-line double conversion technology and hot swappable power modules to offer an high reliability solution. It is available in a standard 19" rack modular architecture. Nautilus series is the most effective solution for protecting Data center, banks, hospitals, airports, industrial systems, emergency lighting systems and other applications.

- \cdot On-line double conversion technology and modular design
- \cdot High reliability
- · Full digital control(DSP)
- Output power factor: 0.9 or 1.0
- \cdot High power density design and power saving
- · Strong loads capability, able to manage 100% unbalanced loads
- · Parallel expansion cabinets
- \cdot N+X parallel redundancy
- · Redundant control system
- \cdot Distributed current join cabinets
- · Sharing the batteries
- \cdot Battery voltage can be configured
- Intelligent charging mode
- · Battery cabinet can be selectable
- · LCD display
- · EPO function
- · Maintenance bypass
- · Intelligent management: RS232 (USB)/RS485 communication ports and CAN interface
- · All modules (power module and Centralized monitor module) are hot swappable
- · SNMP card, Relay card and Modbus (optional)
- · Li-ion battery cabinet (optional)





NAUTILUS

Three-phase on-line, double conversion UPS at 10KVA - 2,4MVA

Model		Nautilus 10	Nautilus 15	Nautilus 20	Nautilus 30	
Input		10kVA/9kW	15kVA/13,5kW	20kVA/16kW	30kVA/27kW	
Phase			3ph	+ n		
Nominal Voltage			380/40	00/415		
Voltage range			208-	-478		
Frequency range			40-7	'0Hz		
Power Factor			>/=	0,99		
Harmonic distortion			<2	2%		
Output						
Phase			3f -	+ n		
Nominal voltage			380/40	00/415		
Power Factor			0,	,9		
Voltage tolerance			(+/-	2%)		
Frequency tolerance (r	normal op.)		(+/-1/2/4	1/5/10%)		
Frequency tolerance (b	equency tolerance (battery op.) 50-60+0,2Hz					
Crest factor	rest factor 3 :1					
THD		<2%				
Waveform		Sinusoidal				
Battery						
Battery charger		da 5,7 - 25A				
Dimensions (WxHxD)	mm	600x1400x860	600x1400x860	600x1400x860	600x1400x860	
Weight	kg	123	126	127	156	

Model		Nautilus 40	Nautilus 50		Nautilus 60	Nautilus 80
Input		40kVA/36kW	50kVA/45kW		60kVA/54kW	80kVA/72kW
Phase				3ph + n		
Nominal Voltage			3	80/400/41	15	
Voltage range				208-478		
Frequency range				40-70Hz		
Power Factor				>/= 0,99		
Harmonic distortion				<2%		
Output						
Phase				3f + n		
Nominal voltage			3	80/400/41	15	
Power Factor				0,9		
Voltage tolerance				(+/- 2%)		
Frequency tolerance (no	rmal op.)		(+/-	-1/2/4/5/1	0%)	
Frequency tolerance (ba	ttery op.)		5	0-60+0,21	Ηz	
Crest factor				3 :1		
THD		<2%				
Waveform		Sinusoidal				
Battery						
Battery charger		da 5,7 - 25A	da 5,7 - 25A	(da 5,7 - 25A	 da 5,7 - 25A
Dimensions (WxHxD)	mm	600x1400x860	600x1400x860) 60	00x1400x860	600x2000x850
Weight	kg	158	186		189	 195









NAUTILUS

Three-phase on-line, double conversion UPS at 10KVA - 2,4MVA

Model		Nautilus 100	Nautilus 120	Nautilus 160	Nautilus 200
Input		100kVA/90kW	120kVA/108kW	160kVA/144kW	200kVA/180kW
Phase			3ph	+ n	
Nominal Voltage			380/40	00/415	
Voltage range			208	-478	
Frequency range			40-7	70Hz	
Power Factor			>/=	0,99	
Harmonic distortion			<2	2%	
Output					
Phase			3f -	+ n	
Nominal voltage			380/40	00/415	
Power Factor			0	,9	
Voltage tolerance			(+/-	2%)	
Frequency tolerance (r	normal op.)		(+/-1/2/4	4/5/10%)	
Frequency tolerance (b	pattery op.)		50-60-	+0,2Hz	
Crest factor	Crest factor 3:1				
THD		<2%			
Waveform		Sinusoidal			
Battery					
Battery charger		25A	30A	38A	50A
Dimensions (WxHxD)	mm	600x2000x850	600x2000x850	600x2000x850	600x2000x850
Weight	kg	286	316	350	380

Model		Nautilus 300	Nautilus 40	00 Nautilus 500				
Input		300kVA/270kW	400kVA/3601	kW 500kVA/450kV	N			
Phase			3ph + n					
Nominal Voltage			380/400/41	380/400/415				
Voltage range			208-478					
Frequency range			40-70Hz					
Power Factor			>/= 0,99					
Harmonic distortion			<2%					
Output								
Phase			3f + n					
Nominal voltage			380/400/41	5				
Power Factor			0,9					
Voltage tolerance			(+/- 2%)					
Frequency tolerance (r	normal op).)	(+/-1/2/4/5/10	0%)				
Frequency tolerance (k	pattery op).)	50-60+0,2H	łz				
Crest factor			3 :1					
THD			<2%					
Waveform			Sinusoidal					
Battery								
Battery charger		80A	100A	130A				
Dimensions (WxHxD)	mm	600x2000x850	600x2000x8	50 1200x2000x85	50			
Weight	kg	600	815	860				

NOTE: Scalability up to 2,4MVA



UNINTERRUPTIBLE POWER SUPPLIES

SIRIUS Rack-Tower, on-line, double conversion UPS 1K – 3K at 110Vac

Sirius series is a special product operating with an input/output voltage of 110Vac. It is an On-line double conversion UPS that can be configured in either rack-mount or tower version. Sirius series is ideal for protection critical loads that require continuous, high quality power supply.

- \cdot Rack and tower convertible
- \cdot High frequency and on-line double conversion technology
- Fully microprocessor control
- Smart RS232 communication with monitoring SW
- Wide input voltage range
- SNMP card slot (Optional)
- Self-testing at startup
- Advanced battery management
 Automatic battery charging in LII
- Automatic battery charging in UPS off mode
 Lighting, surge, short circuit and overload protection
- Fan speed auto control according to the load
- Network/fax/modem surge protection
- · LCD display
- · Extension battery pack (Optional)



Code	Sirius1000	Sirius2000	Sirius3000
Input			
Power	1kVA/0,7kW	2kVA/1,4kW	2kVA/2,1kW
Input type		Single-phase with GND connection	
Input voltage	lo≤60	0% 55-138Vac ±5%, lo>80% 80-138Vac	±5%
Input frequency		46-55Hz / 56-64Hz	
Power Factor		≥0.97	
Output			
Output Voltage		110/115/120Vac	
Output Frequency	In AC mo	de: same than Mains; in Batt mode:	50/60Hz
Power Factor		0.7	
Voltage regulation		±2%	
Switching time		Zero	
Output Voltage distortion THD)v	≤5% with linear mode	
Waveform		sinusoidal	
Efficiency	3<	35% in AC mode; >83% in Batt mo	de
Batteries			
Battery voltage	36Vdc	96Vdc	96Vdc
Battery type	12V - 9Ah	12V – 7.2Ah	12V - 7.2Ah
Autonomy time	12min	20min	16min
Recharge time (typ.)		8 hours	
Recharge current		1A max.	
Communication			
Communication interface		RS232, RJ45, SNMP (optional)	
General Characteristics			
Operating temperature		0 – 40°C	
Humidity		0 95% no condensing	
Altitude		<1500m	
Noise		<45dB	
Mechanical			
Dimensions (WxHxD)	440x86.5x450mm	440x131x550mm	440x131x550mm
Net weight	18kg	36kg	37kg













POLARIS

SWB

SPECIAL

PRODUCTS



Special model of true on-line double conversion system with high efficiency and three-phase Input/Output voltage. The series is High performance and high efficiency with PF 0,9 and PF 1.

Polaris uses power modular technology and it works in redundancy mode N+x.

This model can be used in many industrial applications such as pharmaceutical, food&liquid applications, car production line, wastewater-treatment plant, electron beam technology, steel production, mining&tunneling and for all high temperature, high humidity and dust applications, in special Switchboard cabinet/stainless steel IP54 with air conditioning.

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- \cdot On-line double conversion
- · Output transfer time is 0ms
- PFC technology
- · Full digital control(DSP)
- · Output power factor: 0.9 or 1.0
- Input current harmonic: <3%
- · Support economic (ECO) operation mode
- · Optimization battery group, the quantity of battery
- Wide input voltage range: 208~478Vac
- · Wide input frequency range: 40~70Hz
- · Cold start
- · Communication port: USB, RS232, RS485, Parallel port, Dry contact
- Options: SNMP card/Relay card and MODBUS
- · LCD/LED double display
- Intelligent charging management
- \cdot EPO function
- Common battery group
- · The output can meet 100% unbalanced load
- · Inverter stop contact



Model	10KVA(S/H)	15KVA(S/H)	20KVA(S/H)	30KVA(S/H)	40KVA(S/H)	60KVA(S/H)					
Input	10KVA/9KW	15KVA/13.5KW	20KVA/18KW	30KVA/27KW	40KVA/36KW	60kVA/54kW					
Phase		3 Phase 4 Wires and Ground									
Rated Voltage				380/400/4	15Vac						
Voltage Range			208~478Vac			138~485Vac					
Frequency Range	4	5-55Hz at 50H	z/54-66Hz at	60Hz (auto sen	ising)	40Hz-70Hz					
Power Factor				≥0.99							
Current THDi			≤3%([*]	100% nonlinea	r load)						
Bypass Voltage Range		Max. vo	Itage: 220Vac	: +25%(optiona	al +10%,+15%	,+20%)					
			230Vac: +2	0%(optional +1	0%,+15%)						
			240Vac:	+15%(optiona	l +10%)						
		Ν	Ain. voltage: -	45%		Min. voltage: -45%					
		(optio	nal -10%, -20	%, -30%)		(optional -20%,-30%)					
			Frequency syn	chronize tracin	g range: ±10%						
Generator Input				supported							
Output											
Phase			3 Phas	e 4 Wires and	Ground						
Rated Voltage			3	80/400/415Va	C						
Power Factor				0.9							
Voltage Regulation				±1%							
Line Mede				. 100/							
LINE WODE		$\pm 1\%, \pm 2$	2%, ±4%, ±5%	$\pm 10\%$		frequency >±10%					
Rattony Mode			lied frequency(001001al) 50/6010 20/14-		(±1%/±2%/±4%/±5% optional)					
Crest Factor				3.1							
THD		2% with linear	r load			<2% with linear load					
		% with non line	ear load			$\leq 4\%$ with non linear load					



POLARIS SWB

Model	10KVA(S/H)	15KVA(S/H)	20KVA(S/H)	30KVA(S/H)	40KVA(S/H)	60KVA(S/H)
Battery						
Voltage - ((±96 (16	Standard unit: ±120Vdc (20pcs 12V9AH); 2x20pcs 12V9AH optional) Long run unit : 5V/±108V/±120Vdc /18/20pcs optional)	Standard ur (2x20pcs Long run unit C ±96V/±10E (16/18/20p	nit: ±120Vdc 12V9AH);)ptional Voltage: 3V/±120Vdc pcs optional)	Standard unit: ±120Vdc (3x20pcs 12V9AH) Long run unit Optional Voltage: ±96V/±108V/ ±120Vdc (16/18/20pcs optional)	Long run unit Optional Voltage: ±192V/±204V/ ±216V/±228V/ ±240VDC	Optional Voltage: ±180V/±192V/±204V/ ±216V/±228V/±240/±252/ ±264/±276/±288/±300Vdc (30/32/34/36/38/40/ 42/44/46/48/50pcs optional) 360Vdc~600Vdc (30~50 pcs, 36 pcs define, 36 and 50 pcs no power derating; 32~34 pcs output power factor 0.9;30 pcs output power factor 0.8;)
Current(A) 1.3	5A (2.7A optional) Long run unit: lax. current 10A	Gtailladila		4.5A Long run unit: Max.current 10A	Max.current 10A	
(charge current can be set according to battery capacity installed)		Long ri Max. cur	un unit: rrent 10A	Utility to Batt Utility to byp	ery : Oms; pass: Oms	
Transfer Time	Utility to Battery :	Oms; Utility to	bypass: Oms			Utility to Battery : 0ms; Utility to bypass: 0ms
Protection						
AC Mode	Lo Ii	ad≤110%: last 60n ast 1min, >150% c	nin,≤125%: last 10 hange to bypass in	min,≤150%: nmediately		Load≤110%: last 60min,≤125%: last 10min,≤150%: last 1min
Batt. Mode	Load≤110%: la last 5S, >15	st 10min, ≤125%: I 50% shut down UP	last 1min, ≤150%: S immediately	Load≤110%: last 10min, ≤125%: last 1min, ≤150% last 5S, >150% shut down UPS immediately	Load≤110%: last 60min, ≤125%: last 10min, ≤150%: last 1min, >150% shut down UPS immediately	
Bypass Mode	Breaker 20A	Breaker 32A	Breaker 40A	Breaker 63A	Breaker 80A	
Short Circuit	120A peak	140A	peak	164A	Peak	
Overheat	Line N	Node: Switch t	to Bypass; Ba	ckup Mode: Sh	ut down UPS ir	nmediately
Battery Low			Alarm	and Switch off		
Self-diagnostics		U	Ipon Power Or	n and Software	Control	
EPO (optional)			Shut down	UPS immediat	tely	
Noise Suppression			Complias	with EN62040	neni 	
Alarms	Line Failure, Batte	ery Low, Overload	d, System Fault	Line Failure, Overload, S	Battery Low, ystem Fault	overload, utility abnormal, UPS fault, battery low, etc.
Display						
Status LED & LCD	Line Mod Battery	e, Bypass Mode, B Bad, Overload & U	attery Low, IPS Fault	Line Mode, E Battery Low, Overload &	Bypass Mode, Battery Bad, UPS Fault	
Reading On the LC Comm. Interface	D Input Voltage, Output Freq Volt	, Input Frequency, C uency, Load Percer age & Inner Temper 3, RS485, Parallel (SNMP care	Dutput Voltage, ntage, Battery rature optional), Coupler o d (optional). Relay o	Input Voltage, Inpur Voltage, Output Percentage, Batt. V Iry contact, Intelliger card (optional)	t Frequency, Output Frequency, Load oltage & Inner Temp. nt slot,	USB,RS232, RS485, Parallel port, REPO LBS, Backfeed Intelligent elet
Environment						SNMP card (opt.), Relay card (opt.)
Operating Temp. / S Humidity / Altitude Dimensions(D×W×	Storage Temp.	0 - 95% non 82	condensing / 28x250x868	0°C - 40°C / - < 1500m.Whe	25°C - 55°C n>1500m,lowe	r the rated power for use
Weight (Kg)	115/57	170/63	171/64	223/71	73	58 60
Safety Conforman	CE,EN/IEC	62040-2,EN/IE	C 62040-1-1	CE,EN/IE EN/IEC	C 62040-2, 62040-1-1	IEC/EN62040-1,IEC/EN60950-1,IEC/EN62040-3, IEC61000-4-2,IEC61000-4-3,IEC61000-4-4, IEC61000-4-5,IEC61000-4-6,IEC61000-4-8



VOLTAGE STABILIZER



Single-phase stabilizer

Electronic voltage stabilizer SEM and SET series are designed for a continuous service, providing maximum reliability and requiring minimum maintenance.

Application: SOHO, lighting system, industrial equipment, telecommunication system, medical appliance. Main features: very quick intervention time, high efficiency (98%), no harmonic distortion, no micro-interruption of output voltage, load variation from zero to 100%, any power factor of the load.

Option available: model with Input voltage 90V \div 290V (or 155V \div 500V) and Output voltage 230V (or 400V) \pm 5%

Code		SEM 01	SEM 02	SEM 03	SEM 04	SEM 05	SEM 06	SEM 07
Technical Requirements Power KVA (Cosfi 0,8) Input Voltage V Input Frequency Hz Output Voltage V Waveform Dimensions and Weight	V Hz V Hz	1 230 -30% + 50 230 ± 3% sinusoidal	2 -20%	3	4	5	7,5	10
Dimensions (WxHxD)	mm			310x310x18	0		270x40	60x450
Weight	kg	11	16	18	20	22	37	45
Codice Technical Bequirements		SEM 08	SEM 09	SEM 10	SEM 11	SEM 12	SEM 13	SEM 14
Power KVA (Cosfi 0.8)		15	20	25		40		75
Input Voltage V	V .	230 - 30% +	-20%					
Input Frequency Hz	Hz	50						
Output Voltage V	V	<u>230 ± 3%</u>						
Waveform	Hz	sinusoidal						
Dimensions and Weight				-,			600,40	
Dimensions (VVxHxD)	mm	270x4	60x450	1	310x520x520	100	- 010	50x400
vveight	кg	63	90	115	135	180	210	350

VOLTAGE STABILIZER

Three-phase stabilizer





BATTERY CABINET

Metal cabinet for sealed lead acid batteries

Elsist provides a metal cabinet with hinged door and revolving handle with key, built according to the current European standards (CE) and EN 60439-1, EN 62040-1 standards and suitable to contain sealed lead batteries according to EN 50272-2.

The degree of protection is IP20 (according to IEC 60529).

The cabinet is compatible with all Elsist UPS systems and can contain different types of batteries.

For example, up to 40 x 100Ah batteries can be installed.

If required, the cabinet can be completed with an input switch / breaker sized according to the system power











BATTERIES

Sealed lead-acid 12V 5Ah-200Ah

Elsist batteries are manufactured to withstand long and deep discharge. Packed in a box suitable for safe deliveries.

- · Maintenance-free, sealed lead-acid battery
- \cdot Compatible with most of the UPS devices
- \cdot Capacity from 5Ah to 200Ah
- · Long life



			LxWxH		
E.BT005	12V	4,5Ah	90x70x101mm	1,66kg	
E.BT007	12V	7Ah	151x65x95mm	2,26kg	
E.BT009	12V	9Ah	151x65x95mm	2,51kg	
E.BT012	12V	12Ah	151x65x95mm	3,56kg	
E.BT018	12V	18Ah	181x77x167,5mm	5,35kg	
E.BT024	12V	24Ah	165x125x175mm	8,5kg	
E.BT027	12V	27Ah	165x125x175mm	9,3kg	
E.BT035	12V	33Ah	195x130x164mm	10,5kg	
E.BT040	12V	40Ah	197x165x170mm	12,2kg	
E.BT055	12V	55Ah	239x132x205mm	15,3kg	
E.BT065	12V	65Ah	348x167x178mm	20,2kg	
E.BT070	12V	70Ah	348x167x178mm	21,6kg	
E.BT080	12V	80Ah	260x170x211mm	23,6kg	
E.BT0100	12V	100Ah	330x171x215mm	29,0kg	
E.BT0120	12V	120Ah	410x176x224mm	33,5kg	
E.BT0150	12V	150Ah	482x170x240mm	44,8kg	
E.BT0200	12V	200Ah	522x238x223mm	59,1kg	



BATTERIES

Li-Ion

Li-ion battery provides higher power density, long lifetime, light weight and faster recharge time than lead-acid batteries, to maximize the power system's availability and reduce maintenance cost.

Thanks to these features, Li-ion battery may saves space than lead-acid battery, allowing a more effective use of the space in the environment.

Being less sensitive to higher temperatures, Li-ion battery requires less cooling and hence reduces energy cost, lowering the TCO.

- \cdot Very long lifetime (less or no needs for maintenance)
- \cdot Less weight for the same amount of energy
- · Higher discharge cycles
- \cdot Less self-discharge
- · Faster charging time

Code	Voltage	Capacity	Dimensions LxWxH
E.BTLi24RT	25.6V	50.4Ah	440x460x6.5mm
E.BTLi36RT	38.4V	50.4Ah	440x600x6.5mm
E.BTLi48RT	48V	50.4Ah	440x665x6.5mm
E.BTLi72RT	78.6V	25.2Ah	440x600x6.5mm
E.BTLi96RT	96V	25Ah	440x665x6.5mm



FAQ

WHY TO USE AN ELSIST UPS?

THE ANSWER TO SOME FREQUENTLY ASKED QUESTIONS.

WHY THE QUALITY OF ELECTRICAL NETWORKS IS A PROBLEM?

In the "digital era", the increase in the use of telecommunications and IT infrastructures, which are much more sensitive to electrical disturbances compared to equipment of the past, highlights the importance of having a "clean&stable" electricity supply network in order to avoid equipment breakdowns and interruption of services, with loss of data and increase of financial costs due to such interruptions. Often these disturbances are not detected but they can damage components of equipment without being able to understand the reasons. Because of that it is important to protect the systems from all sources of power supply disturbance.

CAN I USE VOLTAGE STABILIZERS OR FILTERED AND PROTECTED SOCKETS INSTEAD OF A UPS TO PROTECT MY EQUIPMENT?

Voltage stabilizers or protected sockets can be used but still represent a partial solution. Compared to these devices, a UPS in addition filters and adjusts the mains voltage providing a "clean" output voltage, and also offers protection against network failures, continuing to operate thanks to its own batteries. A feature that neither stabilizers nor filtered outlets can offer.

IF I USE A GENSET, AM I SUFFICIENTLY PROTECTED?

No, a generator does not fully protect the load from disturbances in the electricity grid. This is because the generator takes a significantly long time (even a few minutes) to start up and go to full capacity. For this reason, a UPS is necessary to ensure that the connected devices can normally be supplied within the period of time between the interruption of the electricity grid and the start-up of the generator set. Elsist UPSs are compatible with generator set of different brands.

WHAT POWER CAPABILITY SHOULD HAVE MY UPS?

First of all, the total amount of the load to be protected must be calculated (in Watts). The power absorbed by the single device can be found on its technical data sheet or on the label affixed to the equipment itself. Once the total power has been calculated, then select the UPS by adding a margin of about 25% (e.g. if the total load is 800W, then select a 1000W UPS). In this way a margin is guaranteed in case of further addition of equipment, and moreover, the UPS is not always operated at its maximum power, increasing its reliability.

To keep some margin on power capability or to have a scalability feature is always well seen by the customers. Elsist models above 6kVA can meet scalability feature through their parallel operation capability and modular architecture. In this way, the end user can optimize his budget, allocating only the amount necessary to his initial needs, and in the case only allocate later a second investment, if required by an increase in the number of equipment to be protected.

HOW MUCH AUTONOMY TIME MUST I GUARANTEE?

The back-up time guaranteed by the battery may vary depending on the type of device and application protected by the UPS. It may be only the time necessary to carry out a shutdown procedure, or a few minutes to allow a generator to start-up, or a few hours if you feed a system located in a remote place, that is difficult to access. Usually, because the amount of autonomy time required can affect noticeably on the cost of a solution, it is advisable to dimension the back-up time and the number of batteries in an optimal way with respect to the specific needs, also taking into account the degradation of the batteries over time, in order to avoid unnecessary costs.

Elsist generally try to evaluate several options/solutions when give advice to end customer on what will be most beneficial for the him.

MAY THE UPS BE INSTALLED EVERYWHERE?

Thanks to their small size and low noise, small single-phase UPS can be installed anywhere, better if close to the systems they need to protect.

That's another matter in the case of medium-high power systems, with large dimensions and weights.

In this case, it is first of all necessary to make sure that the installation environment has sufficient and adequate space for a good and safe operation of the equipment. Furthermore, the UPS and its battery cabinets can be very heavy. So, make sure the floor is able to support the weight of the equipment and moreover that the room has adequate ventilation to prevent the generation of harmful and dangerous gases.

It must finally be verified that the installation of protection devices upstream or downstream of the UPS (i.e. breakers and switches) complies with the electrical and safety requirements required by the specific application and by the current Standards.



ELSIST MAY OFFER....

A full product range

High-tech and cutting-edge systems.

Systems with high efficiency and high reliability to lower the total cost of ownership

Modularity, to optimize the dimensioning of the power supply architecture

Easy to maintain devices

Pre-sales support

Short leadtime

Efficient Technical assistance service

innovative and eco-friendly energy





WARRANTY POLICY

With its warranty, NAICON guarantees the product to be defective in materials or workmanship for a certain period of time, depending by the models, as of the original delivery date.

If there are material or manufacturing defects during the warranty period, ELSIST affiliates, Authorized Service Centers or authorized Distributors and resellers located in the EEC will repair or (at ELSIST discretion) replace the defective product or components under the terms and conditions below, without any charge for labor or spare parts costs. ELSIST reserves the right (at its sole discretion) to replace the components of defective products or low cost products with assembled parts or new or refurbished products.

Conditions.

- 1. The warranty will only be valid if the defective product is returned together with the sales invoice.
- ELSIST reserves the right to refuse warranty service in the absence of such documents or if the information contained therein is incomplete or illegible.
- 2. This warranty does not cover the costs and / or any damages and / or defects resulting from any modifications or adjustments made to the product, without prior written permission from ELSIST, in order to adapt the product to local technical or safety standards in countries other than those for which the product was originally designed and manufactured.
- 3. The warranty will be void if the model or serial number indicated on the product has been modified, deleted, removed or otherwise illegible.
- 4. Are excluded by the warranty:
- ·Periodic maintenance and repair or replacement of parts subject to normal wear and tear.
- Any modification or modification to the product, without prior written permission from ELSIST to enhance performance than those described in the User and Maintenance Manual
- All costs of technical staff support and any transport from the customer's address to Service Center and vice versa as well as all the risks involved.
- ·Damages due to:
- a.Improper use, including but not limited to: (a) the use of the product for any purpose other than the intended use or failure to observe the ELSIST instructions for correct use and maintenance of the product, (b) installation or use of the product not complying with the Technical or Safety standards in the country in which it is used.
 b.Repairs by unauthorized personnel or by the Customer himself.
- c.Accidental events, lightning, floods, fires, incorrect ventilation or other causes not attributable to ELSIST.
 - d.Defects of the equipment or equipment to which the product was connected.
- 5. The warranty does not affect the buyer's rights established by applicable national laws nor the Customer's rights to the reseller arising out of the sales contract.

In case of failure:

Contact your dealer first, and verify the UPS malfunction.

If the products returned to the Dealer or to NAICON were OPERATING or if they were delivered without our permission or for out-of-warranty products, they will be returned to the customer by charging a cost that will depend on the country where will be shipped.

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NOTES

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