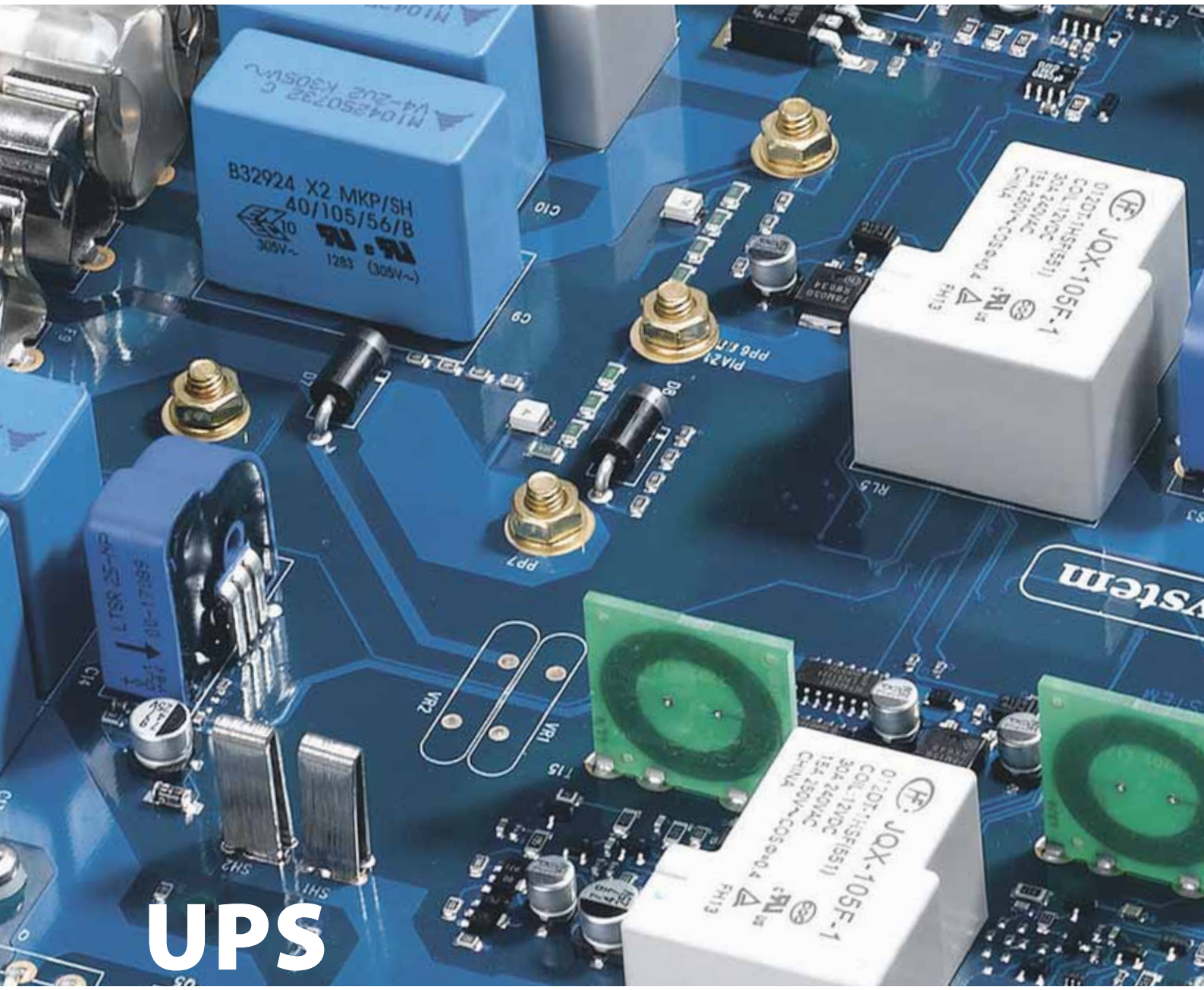
UPS

Uninterruptible Power Supply

MetaSystem

ENERGY

A Group Brand | legrand



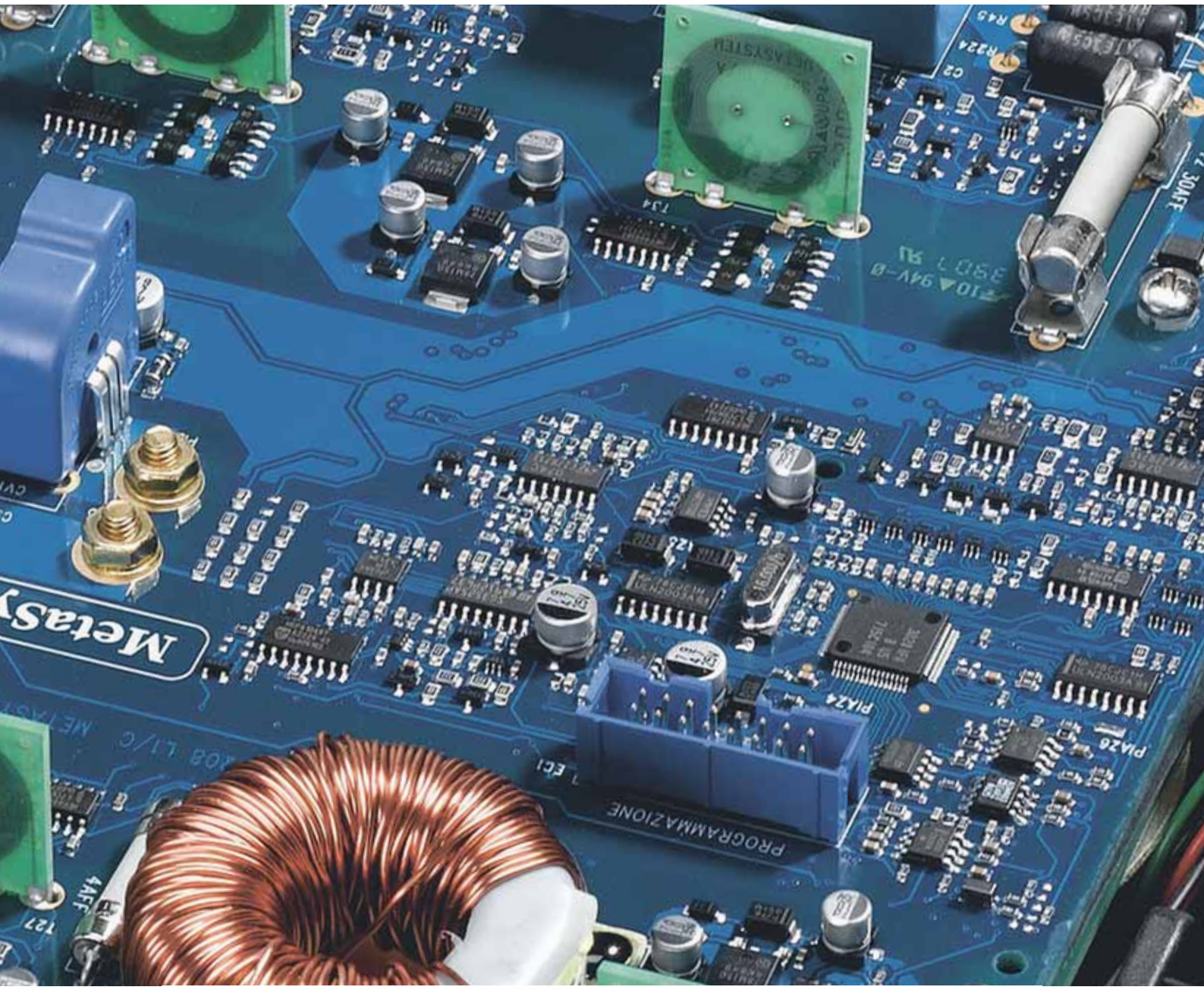
UPS
MetaSystem Energy

Latest generation UPS services

Available in versions with power from 0.5 to 120 kVA, MetaSystem Energy UPS are characterised by high innovation and reliability, result of over 20 active patents, and hundreds of Megawatts installed each year.
Designed with double conversion on-line technology capable of offering reliable power voltage without line disturbance, MetaSystem Energy UPS ensure high performance also for lower voltage models. The UPS offer also includes a full range of added value services for safe maintenance.

Energy respectful for the environment

MetaSystem Energy has undersigned the European Code of Conduct on Energy efficiency, and the quality of Continuity Groups. It's taking an active role in the definition of the criteria that will be implemented in the code of conduct for the 2011-2013 three-year period, and in the definition of new UPS regulations.


PROGRAMMAZIONE

BUYING GUIDE
CHOOSING THE RIGHT UPS

In order to select the right UPS according to the customer's needs, it is mandatory to carefully evaluate the application to be protected. Each kind of UPS definitely has specific features , depending on the application it has been designed for.

Knowing the power absorbed by the load is not all.

Even though the UPS has enough power to support the effective load it doesn't mean that's the best choice.

Standard EN 62040-3 defines UPS classification according to the performances.

CLASSIFICATION		
XXX	**YY**	**ZZZ**
Output dependence on the Input line	Output wave shape	Dynamic performance on the Output

The first part of the classification defines the type of UPS:

- **VFI (Voltage and Frequency Independent):**
  Output Voltage and Frequency are independent from the input ones (from mains). Frequency variations are controlled accordingly with standard IEC EN 61000-2-2.
- **VFD (Voltage and Frequency Dependent):**
  The output Voltage and Frequency are the same as the input ones with no corrections.
- **VI (Voltage Independent):**
  The output Frequency is the same as the input ones; input Voltage variation are reduced and stabilized by electronic/passive regulating devices.

The second part of the classification code defines the output wave form during normal and battery powered operation:

- **S:** sinewave (THDu < 8%)
- **X:** sinewave with a linear load; no-sinewave with a distorting load (THDu > 8%)
- **Y:** no-sinewave

The third part of the classification code defines the dynamic performance of the output voltage during load variations, in three different conditions:

- variation of the operating modes (normal and battery-powered),
- linear load connection by steps in the normal and battery-powered modes,
- non-linear load connection by steps in the normal and battery-powered modes.

EXAMPLE		
VFI	**SS**	**111**
VI	**XX**	**112**
VFD	**YY**	**113**

MetaSystem ENERGY

You can download the **UPS Configurator** free of charge from our website: **www.metasystemenergy.com**. It will help you determine the right size of UPS based on your needs. The modular structure of MetaSystem UPS gives you the option of a wide choice of different runtimes. We have listed the most common runtimes in our table: for any other runtimes, we suggest using the **UPS Configurator** software.

BUYING GUIDE
SYSTEM ARCHITECTURE

DISTRIBUTED ARCHITECTURE

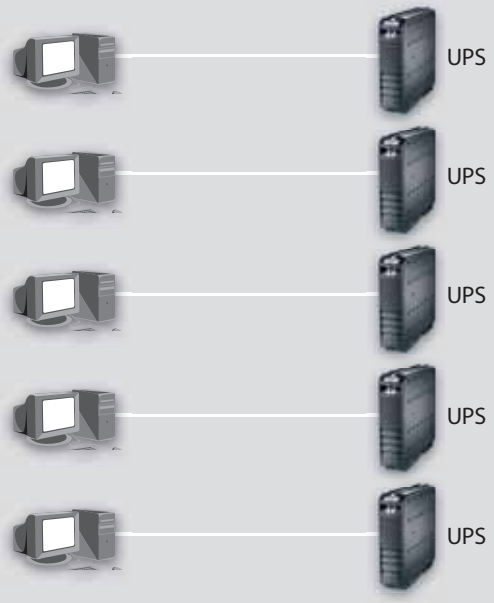
Distributed architecture is used when the application to protect is not particularly critical and when there are logistic problems (e.g.: several rooms, already existing system, etc.).

ADVANTAGES:

- Easy scalability
- Easy installation
- Each individual sub-system is independent

DRAWBACKS:

- Management
- Maintenance
- Electricity consumption



CENTRALIZED ARCHITECTURE

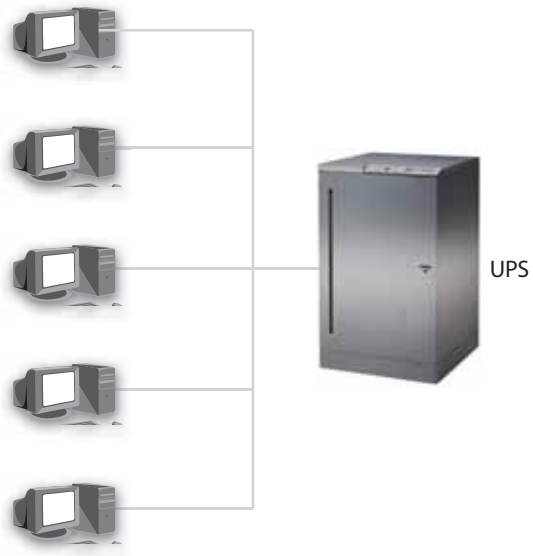
Centralized architecture is preferable to protect the entire structure:

ADVANTAGES:

- The powered devices are monitored by a single system
- Easy maintenance

DRAWBACKS:

- Single system (no redundancy)
- High cost and large fooprint in case of expandability



MODULAR REDUNDANT ARCHITECTURE

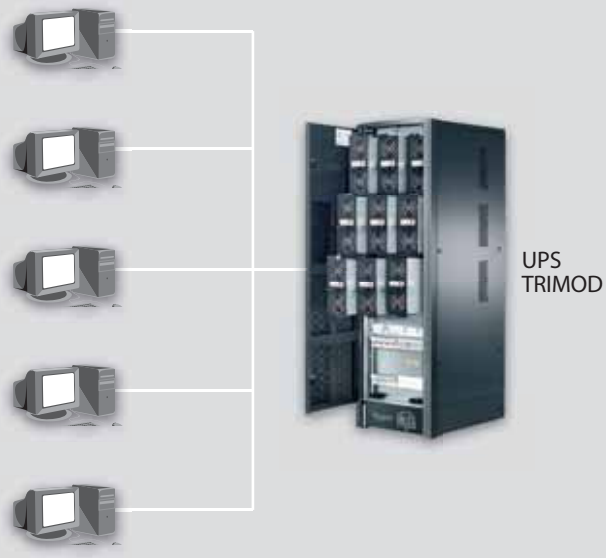
Modular-redundant architecture is the best solution for protecting the critical points of an enterprise:

ADVANTAGES:

- The powered devices are monitored by a single system
- Modular expandability
- Redundant modules
- Easy maintenance
- Low running cost and small footprint

DRAWBACKS:

- The initial cost can be higher than that of a conventional UPS



BUYING GUIDE
OPERATING COSTS

The purchase price of a conventional UPS is generally 10-15 percent less than that of an advanced modular system. However, the purchase price is not the only decisive factor if the overall costs are considered.
A conventional UPS involves higher operating costs than a system based on modular technology, which is also able to reduce the cost for wasted energy. In the long-term, cost comparison tips the scales in favour of modular technology because, even though the purchase price is higher, it is already paid back during the first years of use.

RANSPORTATION COSTS

A conventional UPS generally includes an output transformer, which makes the device two or three times heavier than a new generation UPS. This means that transport costs over 50 percent more. A UPS formed by modules can be easily transported and installed without requiring any special vehicles.

System (30 kVA, n+1)	Weight (Kg)	Volume (m^3)	Transport costs (%)
Conventional UPS	Approx. 900	W x D x H = 2 x (90 x 80 x 190) cm **= 2,75 m^3**	**150%**
TRIMOD	Approx. 465	W x D x H = 2 x (41 x 62 x 134) cm **= 0,68 m^3**	**100%**

INSTALLATION AND POWER (IN kVA) COSTS PER FOOTPRINT

The conventional UPS needs an area (calculated in m^2) that's two or three times larger than an advanced modular system like TRIMOD.

System (30 kVA, n+1)	Footprint	kVA / m^2	Installation costs (%)
Conventional UPS	W x D: 2 x (90 x 80) cm 1,44 m^2	60 kVA / 1,44 m^2 **= 41,6**	**150%**
TRIMOD	W x D: 2 x (41 x 62) cm 0,52 m^2	30 kVA / 0,52 m^2 **= 57**	**100%**

RELIABILITY (REDUNDANCY, AVAILABILITY)

The reliability of a system depends on the mean time between failures (MTBF) and the mean time required to repair (MTTR).
MTBF represents the reliability rate of the system and its components and is expressed in mean operating hours between two faults.
MTTR represents the restoring rate of the system and its components and is expressed in mean operating hours required to restore the system.
Power module redundancy increases the MTBF.
A UPS with modular-redundant architecture can be configured as a power redundant N+X system so that zero downtime is guaranteed even if a module fails.
Complete diagnostics and modular architecture reduce the MTTR.
Precise indications and a large displais allow faults to be immediately identified.
Modular architecture allows the device to be repaired very quickly by simply replacing the faulty module without a downtime and with a very high restoring rate at the very first intervention.

ENERGY COSTS

One 30 kVA Trimod UPS unit	
Load powered	16 kW
Trimod 1 UPS type	24 kW Tot. 24 kW
Redundancy level	N+1
Efficiency of the System	= 0,93
In Power	17,20 kW
Out power	16 kW
Efficiency delta	1,20 kW

	kVA	kWatt
UPS	30	24
Load used	67%	16
	0,93	
UPS Losses kW	1,20	
Total Losses in one year (kWh)	10,550	
UPS Running Cost 1 year €	1,266	
UPS Running Cost 5 year €	6,330	
UPS Running Cost 8 year €	10,128	

Two 20 kVA conventional UPS units	
Load powered	16 kW
UPS 2 UPS type	16 kW Tot. 32 kW
Redundancy level	N+1
Efficiency of the System	= 0,87
In Power	18,39 kW
Out power	16 kW
Efficiency delta	2,39 kW

	kVA	kWatt
UPS	40	32
Load used	50%	16
	0,87	
UPS Losses kW	2,39	
Total Losses in one year (kWh)	20,943	
UPS Running Cost 1 year €	2,513	
UPS Running Cost 5 year €	12,566	
UPS Running Cost 8 year €	20,106	

Savings relating to the in efficiency delta:
1 year = € 1.247
5 years = € 6.236
8 years = € 9.978

Particular attention has been paid with the latest generation static UPS, to both the energy absorbed from mains and the power supplied to the user.

This is because energy waste is mainly caused by the overall efficiency of the system.

Firstly, increasing the efficiency means reducing that part of the power absorbed by the UPS not supplied to the load, but transmitted to the surrounding environment in the form of heat. The choice of a UPS system with over 93% AC/AC efficiency therefore allows energy consumptions to be immediately reduced in a significant way since, besides improving the quality of the environment for both the machines and the people who work there, the lower amount of heat dissipation in the installation site means that there is less need for using ventilation and air conditioning systems.

The majority of the UPS systems available on the market are not modular and cannot be expanded. This means that the system must be oversized at the start so as to allow for future expansions (which may not even be required). It also means that much of the investment in the UPS could go to waste.

Conventional UPS installations in the redundant parallel configuration supply not over then 50% of their power. This means less efficiency than in full load conditions. With TRIMOD modular systems, several power modules are configured in parallel, for instance, three small modules instead of two large stand-alone systems. This configuration is equally redundant, but with the advantage of being more efficient and able to save more energy.

MAINTENANCE COSTS

It is much more expensive and not so fast to mantain a conventional UPS system, with its larger size and higher number of spare parts than a modular one.

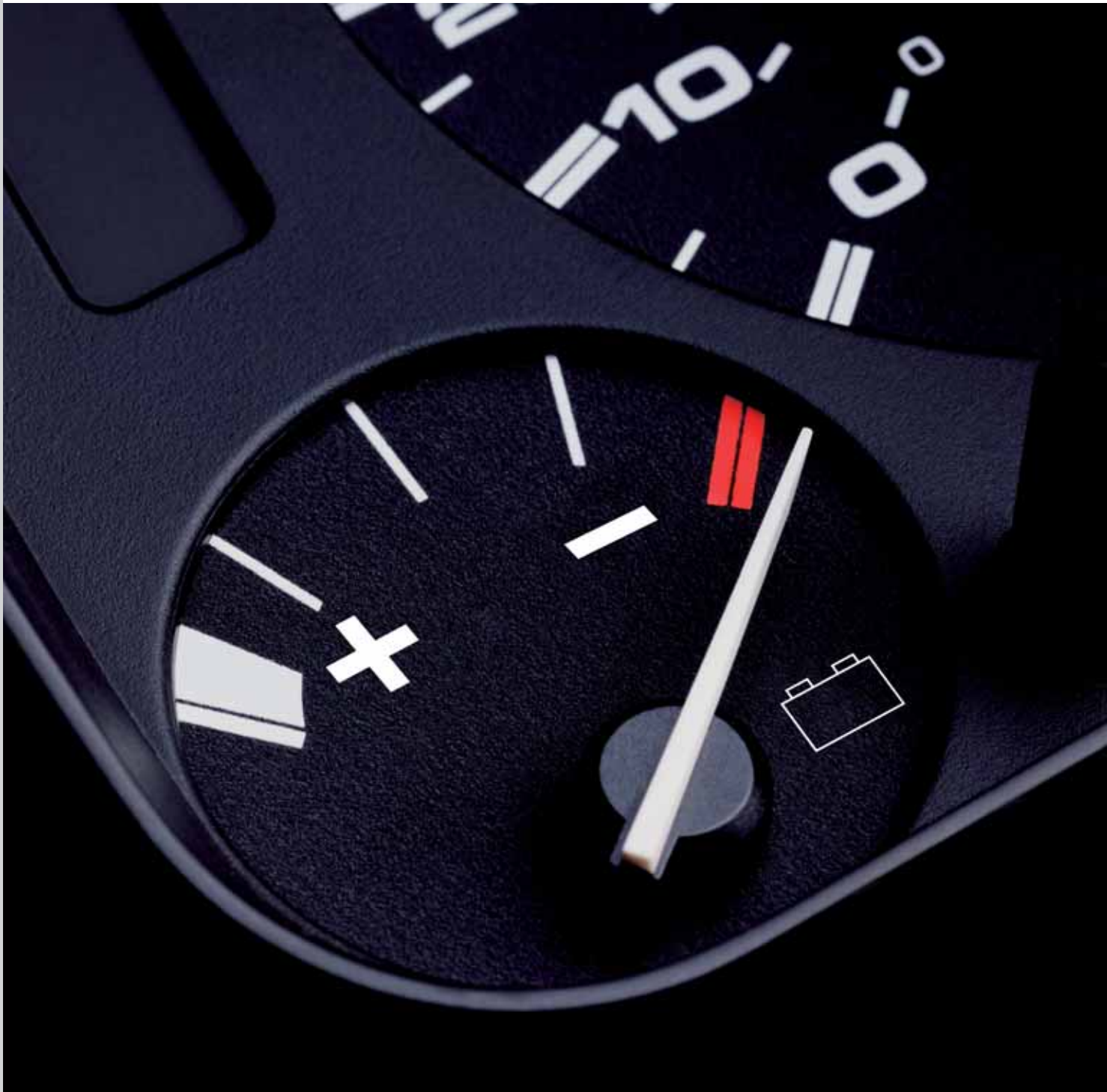
The maintenance costs of a modular system can even be as much as 30% less than those of a conventional system since the modules are standardized (one spare module will cover all needs), small and easily replaceable. This speeds up all repairs since the faulty module can just be replaced during the first intervention without even having to interrupt the service.

BUYING GUIDE
OPERATING COSTS

BATTERY MANAGEMENT

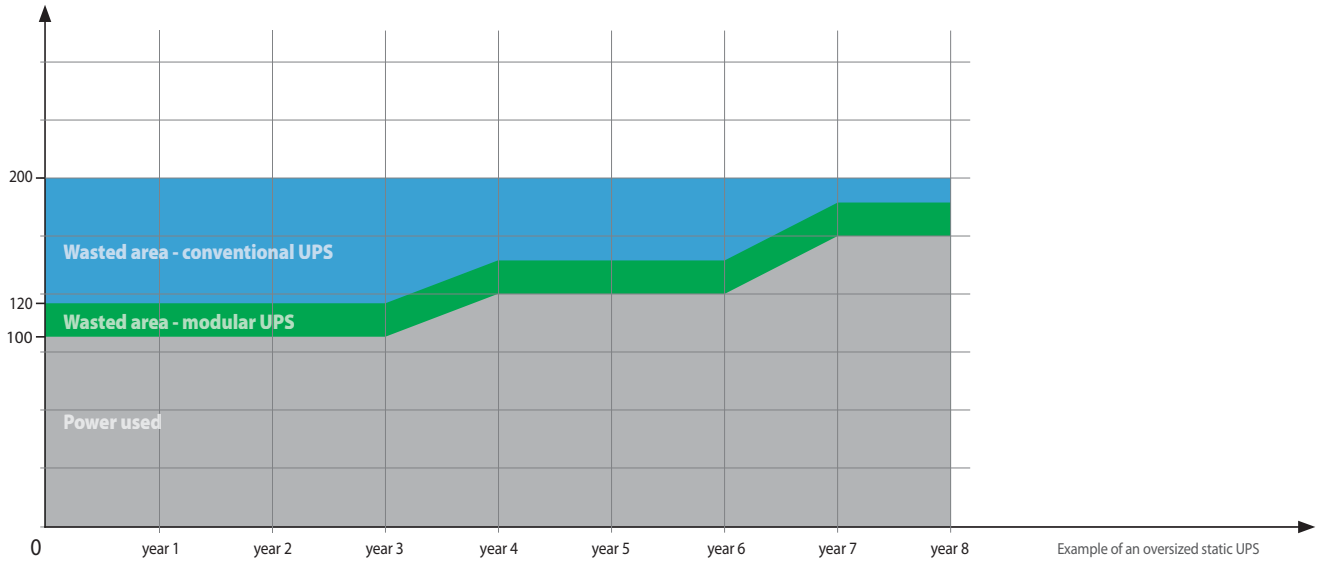
The cost of battery management is an important part of the total operating costs. The batteries must always be kept in an efficient condition and must suit the load that's being protected, so as to guarantee the performance of the UPS. TRIMOD UPS are equipped with a Smart Battery Management System improving considerably the life of the batteries, thus reducing the operating costs as well as the disposal of exhaust batteries.

	year 1	year2	year 3	year 4	year 5	year 6	year 7	year 8	year 9	Total
CONVENTIONAL UPS				1,00			1,00			2,00
UPS TRIMOD					1,00					1,00
SAVING										-50%



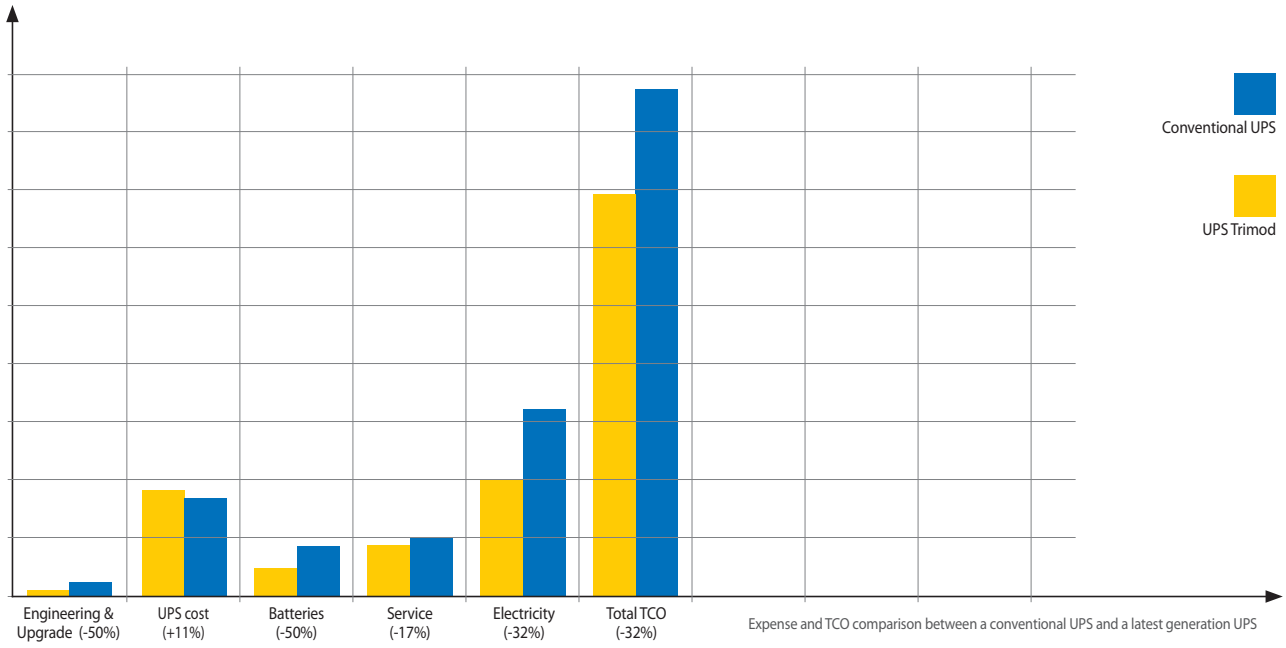
COST OF SCALABILITY

If a conventional system needs to be expanded, an identical UPS must be installed alongside the existing one.
This needs a lot of space as well as modifications to the electrical system and wiring.
Moreover, to carry out all this, the old UPS must be turned off. TRIMOD modular systems are scalabled by installing an additional power module without disconnecting the load, with no extra space required and with no further installation costs.
This flexible method makes the new generation UPS very simple to upgrade, with only 5-10 percent additional costs.



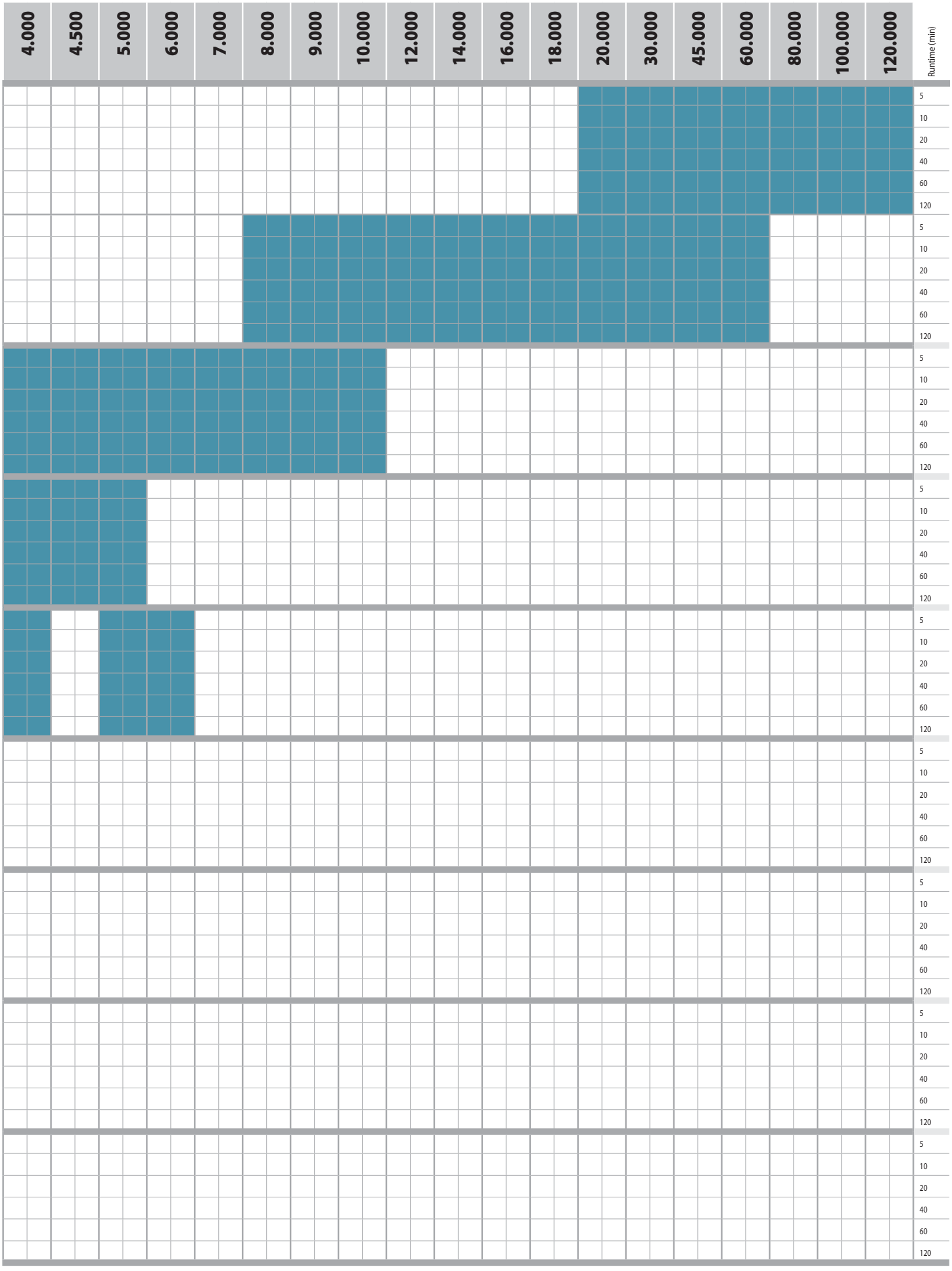
CONCLUSIONS

The primary purpose of a UPS is to protect equipment and sensitive data, often of even greater importance for an enterprise.
A static UPS has a remarkable impact on electricity consumptions. So much so, these can weight heavily on the overall operating costs, up to 33% during the average 8-years life of the UPS itself. This means that it is important to consider the energy quality and energy efficiency when choosing a new UPS so as to achieve a reduction in electricity consumptions, thus the price of the UPS impacts less than 30% of the overall operating costs.
Besides providing top-level performance, the latest generation of static UPS also guarantee lower energy consumption, in order to reduce energy costs and environmental impact.
Modular solutions with "on-demand" architecture such as those produced by Meta System are the ideal choice for business continuity.



UPS PRODUCT RANGE

		Power (VA)	600	700	800	1.000	1.250	1.500	1.750	2.000	2.250	2.500	3.000	3.500
MODULAR THREE PHASE VFI	ARCHITRIMOD													
	TRIMOD													
MODULAR SINGLE PHASE ONLINE VFI	MegaLine						■	■	■	■	■	■	■	■
	MegaLine Rack						■	■	■	■	■	■	■	■
SINGLE PHASE ONLINE VFI	Whad				■	■		■		■		■	■	
	Whad Rack				■	■		■						
POWER STATION	DHEA					■		■						
DAKER	Niky Plus		■		■	■		■						
	DK					■				■			■	


4.000
4.500
5.000
6.000
7.000
8.000
9.000
10.000
12.000
14.000
16.000
18.000
20.000
30.000
45.000
60.000
80.000
100.000
120.000
Runtime (min)
5
10
20
40
60
120

MODULAR THREE PHASE VFI

The three-phase UPS range developed and produced by Metasystem Energy is unique in its field, and only consists of Modular UPS.

The UPS system is essential for the protection of critical environments such as data centres and industrial or emergency applications from unwanted power cuts, and from damage to the equipment caused by the power supply.

The decision to offer only this type of architecture is the result of the consolidated and pioneering experience of Metasystem Energy in the sector of modular UPS, and of the many advantages in terms of reliability and total management costs that result.

The expandable modular systems ensure optimisation of UPS investments, adapting them to the actual requirements, without jeopardising future expansions, and avoiding unwanted energy waste. Metasystem Energy solutions can in fact be configured, in terms of both power and autonomy, based on actual needs. This flexibility means that the most suitable solution can always be obtained.

In addition to expansion in small steps, the modular philosophy, based on compact modules (both in terms of power and battery), also provides simple and cost-effective management of maintenance operations.

The extreme flexibility of the Metasystem Energy solutions is guaranteed also as far as the connection to the electric system and the power to protect are concerned. In fact, for solutions up to 30 kVA it is

possible to configure the input and the output both as one-phase and three-phase, with the possibility of obtaining all the different combinations.
One-phase/One-phase, Three-phase/One-phase, Three-phase/Three-phase, and One-phase/Three-phase.
The range includes solutions from 8 kVA up to 120 kVA. However, differently from the traditional solutions currently available on the market, Metasystem Energy introduces a new model, which does not offer pre-set power levels, but rather the possibility of selecting the most suitable combination on-demand.

EXCLUSIVE FEATURES

Simple installation

The maximum transportation and installation simplicity is ensured by the reduced weights and sizes of the system modules. One person can very easily transport an three-phase UPS using a commercial vehicle, move it to the inside of the building, and install it in total safety.
Metasystem Energy has paid special attention in avoiding the presence of dangerous voltages even when the various power modules or battery drawers are removed from the system.

Quick maintenance

The maintenance costs of a modular system are up to 30% lower when compared with a traditional system thanks to the standardisation of the module (a replace module will meet all needs), its reduced size, and its easy replacement.
This means that faults can be repaired quickly by simply replacing the faulty module, without interruption of the service, and already during the intervention from support personnel.

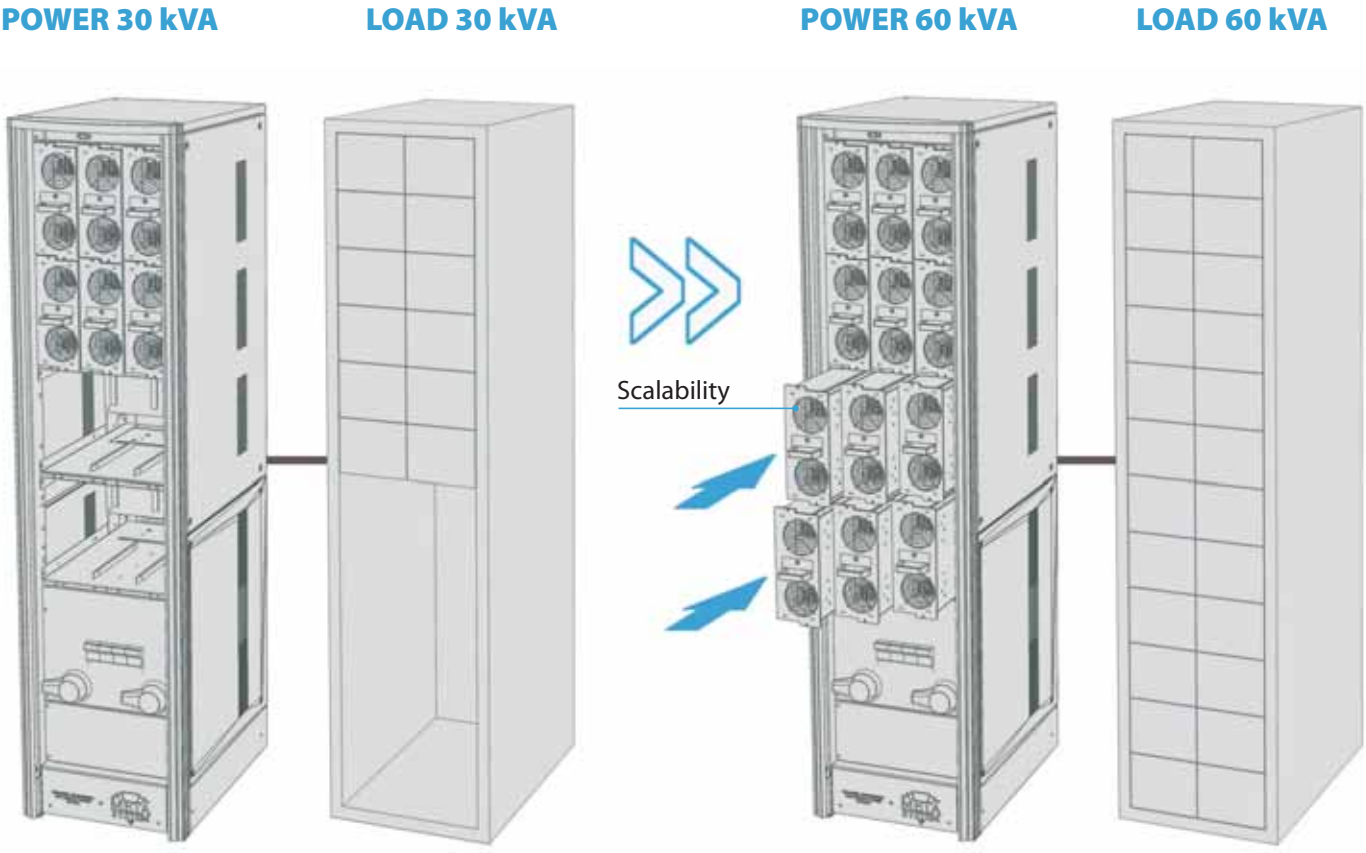
SMART BATTERY CHARGER system

The 3-stage intelligent charger system, "Smart Charger", prolongs battery life considerably even by 50%, halving the number of replacements and environmental pollution linked to battery disposal.

Reduced consumption

Because the impact on electric consumption of an UPS system is rather relevant, when choosing a new one it is important to take into account quality and energy efficiency considerations, which can bring reductions in power consumption.
In addition to offering maximum protection, modular UPS ensure also a reduction of power consumption, resulting both in cost containment, and in a lower impact on the environment.

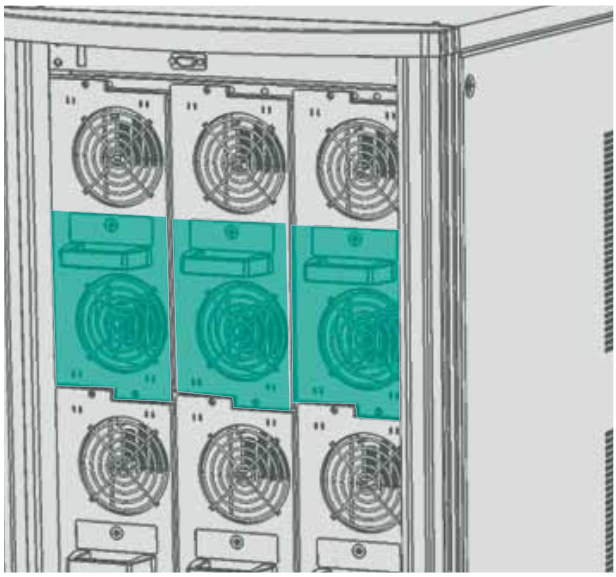
MODULARITY= SCALABILITY



FLEXIBILITY ACROSS TIME

In order to expand a traditional system, another similar UPS can be added to the existing one. This requires more space, as well as modifications to the electric system and the wiring.
With modular systems, the updating is performed by installing an additional power module, without any interruption of the load, or increase in size, without bringing further installation costs.
This flexibility makes it very simple to expand new generation UPS, whilst significantly reducing costs.

MODULARITY= REDUNDANCY



NORMAL OPERATION

With the correct sizing of the power modules, it is possible to split the load so that the modules do not operate at 100% of their power.

OPERATION IN CASE OF FAULT

If one of the modules becomes faulty, the others continue to power the load, sharing the power that previously was supplied by the faulty module.

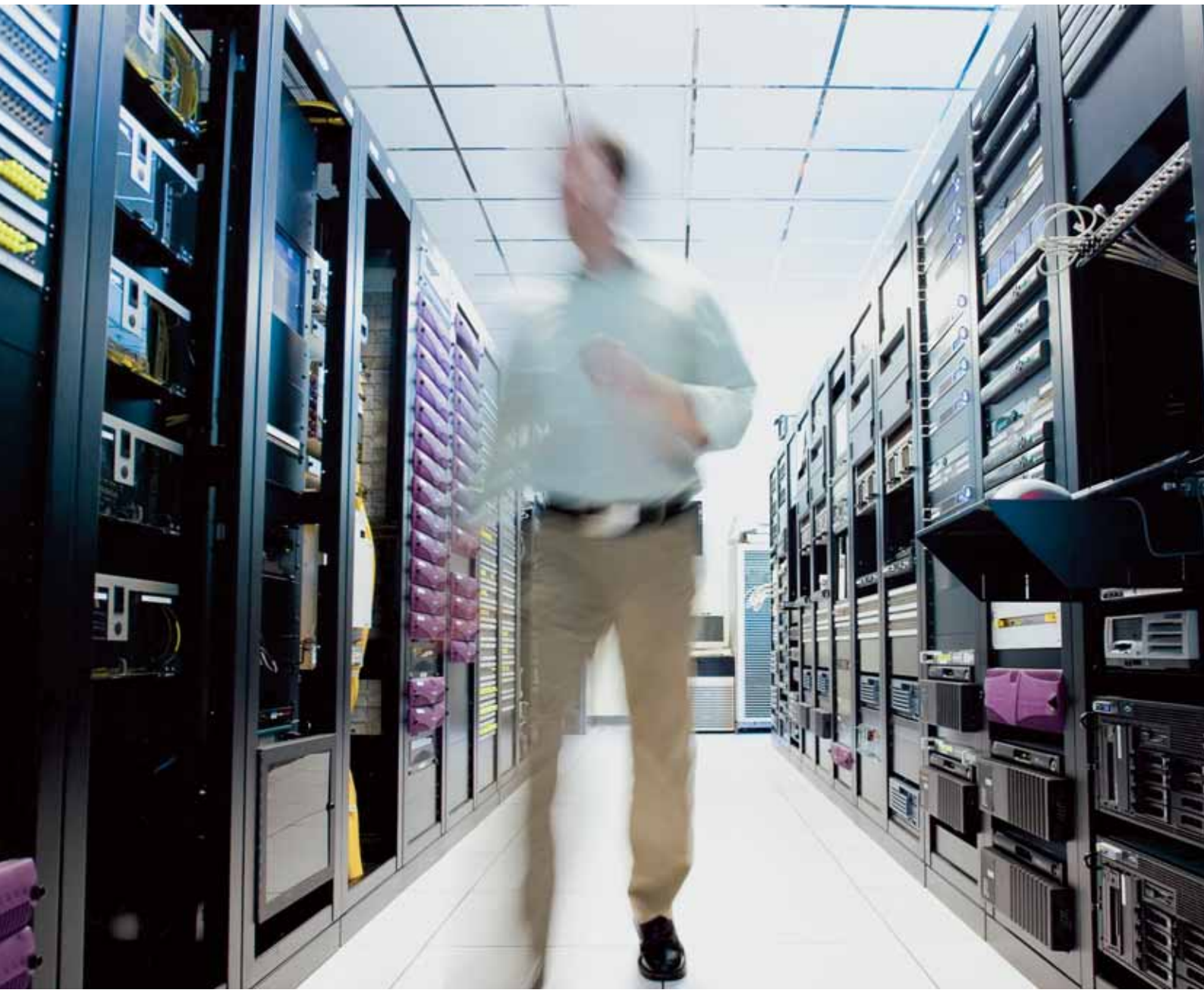
SERVICE CONTINUITY

Operation continuity, also in case of fault of one of the module, is ensured without interruption or switching, thanks to the parallel load sharing. All the cards contribute to powering the load.

The degree of redundancy may be set using the software or the display. This enables receiving notifications when absorption increases compromise the redundancy but not the operation.

MODULAR THREE PHASE VFI

ARCHIMOD



ARCHIMOD® is the innovative modular and expandable architecture system that helps simplifying and speeding up the design and installation of critical medium and large size infrastructures. The system enables optimizing the size of the whole infrastructure and the management costs, reducing power consumption and the "Total Cost of Ownership".
The redundancy of the modules ensures the highest performance and reliability levels through the configuration of the whole system as N+1 UPS, while the ease and the quick reset in case of fault are ensured by the low weight and size of each individual element making up the system, and the Hot Swap functionality.

It is possible to install inside the rack up to 3 control modules to ensure their redundancy (up to N+2 level). In this way, in addition to the redundancy of the power and battery modules, there is also the redundancy of the control modules, ensuring redundancy of all ARCHIMOD® components.
ARCHIMOD® consists of a reduced number of base components including 19" (42U) rack enclosures, power modules, battery drawers and software for the advanced management of the system, as well as other accessories for the installation and powering of ICT equipment. All components create 20 to 120 kVA N+X modular and redundant systems.

ARCHIMOD

PROTECTING THE POWER SUPPLY

TUNNEL

The control or power tunnel can house up to 3 power modules or additional battery charger modules, it occupies 6 U racks and is designed for connecting to other tunnels. The power tunnel features no control logic, housing only modules. The control tunnel includes control logic, the display, keyboard, status indicator and the maintenance serial interface RS232. At the back we find: a double slot for the SNMP board, an LL port, an RS232 and 5 relay contacts. Up to 3 control tunnels can be installed inside the rack cabinet to allow their redundancy (up to level N+2) and all the ARCHIMOD® components.

POWER MODULES

The 6.7 kVA power module is extremely compact for ease of installation. Each module consists of a PFC, booster, inverter, battery charger, bypass and a microprocessor controlled command and control board. 1 to 18 power modules can be installed inside the rack in parallel with each other until the total power of the UPS is reached. They are independent from one another and guarantee a supply of (residual) power to the UPS even if one of them fails. To fully restore the system, power to the load does not have to be disconnected nor does the system have to be put in the bypass mode thanks to the Hot Swap function.

BATTERY MODULES

The module houses seven 12 V 9 Ah batteries connected in series and is divided into two series, 36 V and 48 V, to guarantee maximum safety especially during maintenance. Autonomy can be increased by adding battery modules in multiples of 3 with a simple Plug&Play connection. Each module is Hot Swappable and can be replaced without disconnecting power to the load or switching the system to bypass.

DISTRIBUTION MODULE

The switching and cutting devices, the terminal block for the in/out connection and for the additional batteries are inside the distribution module. It can be accessed at the front and back. With ARCHIMOD® you can have different in/out configurations to suit the existing electrical system and load characteristics. The system can be configured during installation so that the emergency bypass line is independent from the power line.

ARCHIMOD
ACCESSORIES

Item code	Description
PTH10000	Archimod cabinet, No. 1 Tunnel with control logic, No.1 distribution module 20 kVA, No.12 battery slot
PTH10010	Archimod cabinet, No. 1 Tunnel with control logic, No.1 distribution module 20 kVA , No.30 battery slot
PTH10020	Archimod cabinet, No. 2 Tunnel with control logic, No.1 distribution module 60 kVA , No.24 battery slot
PTH10030	Archimod cabinet, No. 3 Tunnel with control logic, No. 1 distribution module 60 kVA , No. 18 battery slot
PTH10040	Archimod cabinet, No. 3 Tunnel with control logic, No. 1 distribution module 120 kVA , No. 12 battery slot
PTH10050	Archimod cabinet, No. 3 Tunnel with control logic, No. 2 Tunnel no control logic, No. 1 distribution module 120 kVA ,
PTH10060	Archimod cabinet, No. 3 Tunnel with control logic, No. 3 Tunnel no control logic, No. 1 distribution module 120 kVA ,

Item code	Description
PTH10100	Modular Battery cabinet (No. 36 battery slot)
PAT01050	Standard Battery cabinet (No. 21 Long Life battery 94ah)
PAT01120	plugs battery slot

Item code	Description
PAT01020	Power modules 6,7kva

Item code	Description
PAT01010	Battery modules
PAT01070	KIT 3 battery modules
PAT01060	KIT 3 battery modules

CONFIGURATIONS

POWER: 20 KVA RUNTIME 80% @ LOAD: 1h

1 CABINET
1 TUNNEL
3 POWER MODULES
1 DISTRIBUTION MODULE
30 BATTERY MODULES

POWER: 40 KVA RUNTIME 80% @ LOAD: 20 min

1 CABINET
2 TUNNEL
6 POWER MODULES
1 DISTRIBUTION MODULE
24 BATTERY MODULES

POWER: 60 KVA RUNTIME 80% @ LOAD: 6 min

1 CABINET
3 TUNNEL
6 POWER MODULES
1 DISTRIBUTION MODULE
18 BATTERY MODULES

POWER: 80 KVA RUNTIME 80% @ LOAD: 12 min

2 CABINET
3 TUNNEL
12 POWER MODULES
1 DISTRIBUTION MODULE
36 BATTERY MODULES

POWER: 100 KVA RUNTIME 80% @ LOAD: 10 min

2 CABINET
3 TUNNEL
15 POWER MODULES
1 DISTRIBUTION MODULE
36 BATTERY MODULES

POWER: 120 KVA RUNTIME 80% @ LOAD: 6 min

2 CABINET
3 TUNNEL
18 POWER MODULES
1 DISTRIBUTION MODULE
36 BATTERY MODULES

ARCHIMOD

TECHNICAL FEATURES

MODEL	ARCHIMOD® 20	ARCHIMOD® 40	ARCHIMOD® 60	ARCHIMOD® 80
GENERAL CHARATERISTICS				
Power Rating	6.7 kVA per UPS Module (20kVA per 3 Modules), cosφ 0.8			
Technology	On Line Double Conversion VFI-SS-111			
System design	Modular, scalable & redundant UPS system in one single 19 inch rack cabinet.			
Hot Swap capability	Power and / or battery modules replacement without shutting down the UPS			
INPUT CHARACTERISTICS				
Input Connections	230V,400V 3PH + Neutral		400V 3PH + Neutral	
Input Frequency	50-60 Hz + / ±2% Autosensing			
Input Voltage Range	230V +15% / -20% 1F 400V +15% / -20% 3F		400V +15% / -20% 3F	
Input Current Distortion	< 3%			
Genset Compatibility	ARCHIMOD® can be set up so as to achieve synchronism between the input and output frequency even for wider frequency ranges, ±14%			
Input Power Factor	> 0.99			
OUTPUT CHARACTERISTICS				
Rated Power	20kVA / 16kW	40kVA / 32kW	60kVA / 48kW	80kVA / 64kW
Rated Output Voltage	230V 1F,400V 3F		400V 3F	
Efficiency at full load	95%			
Output Frequency (nominal)	50 / 60 Hz ±0,1			
Crest Factor	3.5:1			
Output Voltage Tolerance	±1%			
Overload Operation	10 minutes @ 125% and 1 minute @ 150%			
Efficiency in Eco Mode Status	99%			
Bypass	Automatic bypass & Maintenance bypass			
BATTERIES				
Battery Module	Battery modules are designed to be easily placed into the rack.			
Battery Type / String Voltage	VRLA - AGM / 252 Vdc			
Battery Runtime	Configurable & Scalable both internally and externally with additional battery cabinets			
Battery Recharge	Advanced 3-Step Smart Charger Technology			
COMMUNICATIONS & MANAGEMENT				
LCD Display	4 lines / 20 characters for real time monitoring of UPS status. 4 menu-driven interface buttons 4 status at a glance LEDs			
Communication Ports	2 RS232 Serial Ports, 1 Port with logic contacts, 5 outputs with clean contacts, 2 SNMP interface slots (optional)			
Emergency Power Off (EPO)	Yes			
Remote Mangement	Available			
PHYSICAL CHARACTERISTICS				
Height, Widht, Depht & Rack Heigth	2.080 mm / 570 mm / 912 mm - 42U			
Installed Power Modules	3	6	9	12
Installable Battery Modules	UP to 30	UP to 24	UP to 18	-
Net Weight	205 Kg	240 Kg	276 Kg	272 Kg
ENVIROMENTAL SPECIFICATIONS				
Temperature / Humidity	0 - 40 °C / 20 - 80% non condensing			
Audible Noise at 1 meter	50÷65 dBA			
Heat Dissipation (full load)	2730 BTU / h	5460 BTU / h	8190 BTU / h	10920 BTU / h
CERTIFICATIONS				
Certifications	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3			
Standard Warranty	Repair or replacement 2 years			
SERVICES				
Installation	User capable, Modular Rack Based structure and “p&p” modules make easy and quick installation and configuration			
Maintenance	User capable, optional factory service available Metasystem Energy			

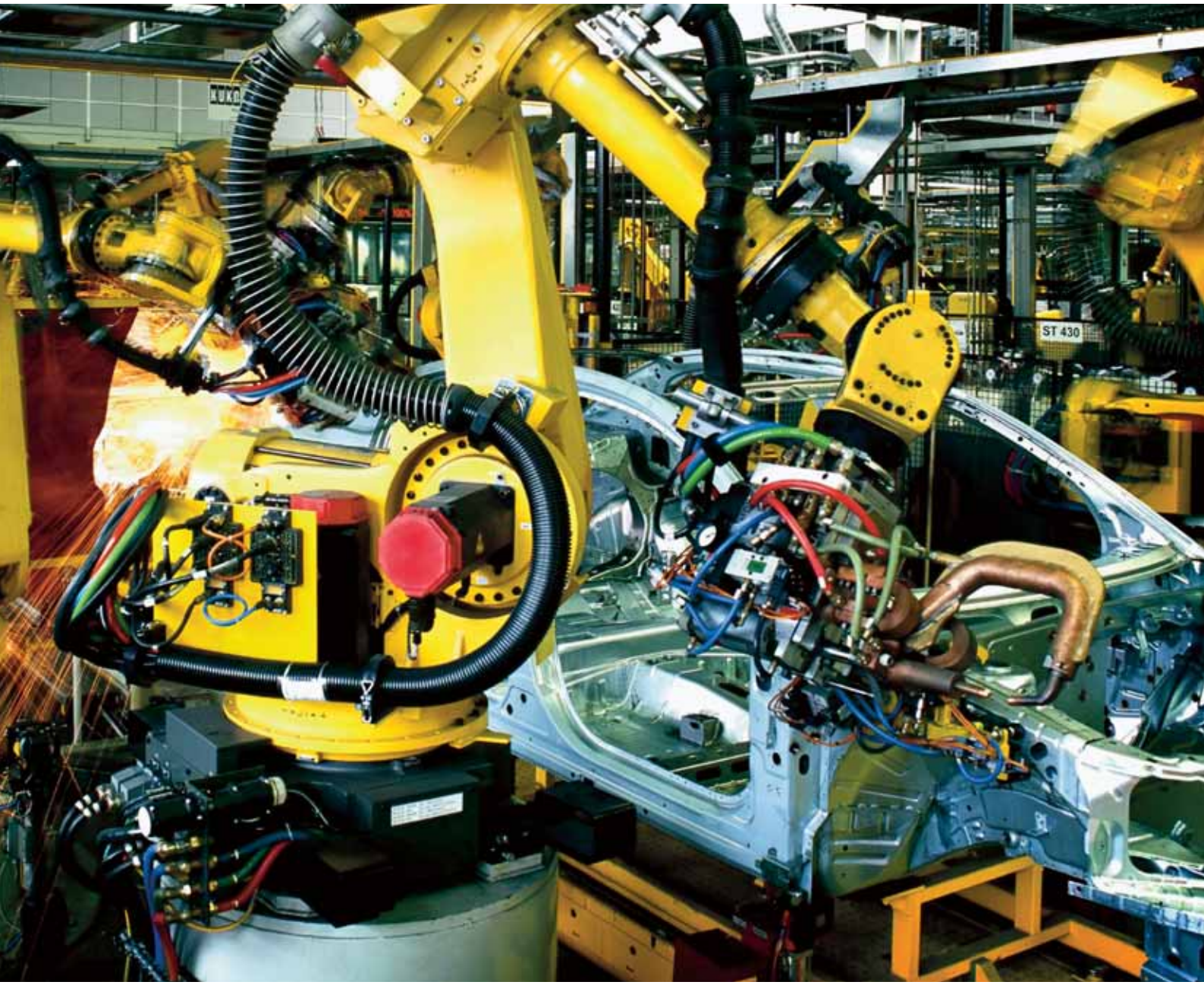
ARCHIMOD

TECHNICAL FEATURES

ARCHIMOD® 100	ARCHIMOD® 120
6.7 kVA per UPS Module (20kVA per 3 Modules), cosφ 0.8	
On Line Double Conversion VFI-SS-111	
Modular, scalable & redundant UPS system in one single 19 inch rack cabinet.	
Power and / or battery modules replacement without disconnecting the UPS	
400V 3F + Neutral	
50-60 Hz ±2% Autosensing	
400V +15% / -20% 3F	
< 3%	
ARCHIMOD® can be set up so as to achieve synchronism between the input and output frequency even for wider frequency ranges, ±14%	
> 0.99	
100kVA / 80kW	120kVA / 96kW
400V 3F	
95%	
50 / 60 Hz ±0,1	
3.5:1	
±1%	
10 minutes @ 125% and 1 minute @ 150%	
99%	
Automatic bypass & Maintenance bypass	
Battery modules are designed to be easily placed into the rack.	
VRLA - AGM / 252 Vdc	
Configurable & Scalable both internally and externally with additional battery cabinets	
Advanced 3-Step Smart Charger Technology	
4 lines / 20 characters for real time monitoring of UPS status. 4 menu-driven interface buttons 4 status at a glance LEDs	
2 RS232 Serial Ports, 1 Port with logic contacts, 5 outputs with clean contacts, 2 SNMP interface slots (optional)	
Yes	
Available	
2.080 mm / 570 mm / 912 mm - 42U	
15	18
-	-
318 Kg	364 Kg
0 - 40 °C / 20 - 80% non condensing	
50÷65 dBA	
13650 BTU / h	16380 BTU / h
EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3	
Repair or replacement 2 years	
User capable, Modular Rack Based structure and “p&p” modules make easy and quick installation and configuration	
User capable, optional factory service available Metasystem Energy	

MODULAR THREE PHASE VFI

TRIMOD



TRIMOD®, is a Metasystem Energy's unique UPS with power range from 8 to 60 kVA that can adapt immediately to the changing needs of the load it protects offering more power, longer autonomy and the utmost reliability. Thanks to its revolutionary conception, TRIMOD® is the first UPS able to offer

today's three forefront technologies in one single system - modularity, scalability and redundancy.

TRIMOD® is a totally modular UPS whose basic module can be programmed individually so as to obtain the required input/output configuration. This means that three-phase or single-phase voltage values can be handled on the input and output to get the standard three/three, three/single, single/three and single/single combinations as needed.

This is not all: the UPS can provide single-phase and three-phase lines at the same time, or two or more single-phase lines of even different power ratings on the output (on request).

TRIMOD
CONFIGURATIONS

Model	Nominal Power kVA	Active Power kW	Runtime @ 80% load (min)	Cabinet total number	Net Weight (Kg)	Item Code
TRIMOD 8	8	6,4	9	1	167	PTH00840
			33	1	279	PTH00850
			43	1	279	PTH00860
			62	2	415	PTH00870
TRIMOD 10	10	8	9	1	167	PTH00880
			15	1	223	PTH00890
			33	1	279	PTH00900
			47	2	471	PTH00910
			59	2	527	PTH00920
TRIMOD 16	16	12,8	9	1	246	PTH00930
			19	2	382	PTH00940
			27	2	438	PTH00950
			44	2	550	PTH00960
			84	2	890*	PTH00970
TRIMOD 20	20	16	9	1	246	PTH00980
			14	2	382	PTH00990
			27	2	494	PTH01000
			61	2	890*	PTH01010
			56	3	718	PTH01020
TRIMOD 30	30	24	7	2	404	PTH01030
			13	2	460	PTH01040
			38	2	910*	PTH01050
			91	3	1670*	PTH01060
TRIMOD 45	45	36	8	2	564	PTH01070
			15	3	732	PTH01080
			20	2	925*	PTH01090
			29	5	1180	PTH01100
			56	3	1690*	PTH01110
			91	4	2450*	PTH01120
TRIMOD 60	60	48	0	1	192	PTH01130
			9	3	760	PTH01140
			14	3	872	PTH01150
			14	2	955*	PTH01160
			28	5	1432	PTH01170
			38	3	1715*	PTH01180
			61	4	2474*	PTH01190
			91	5	3234*	PTH01200

(*) The above configurations are based on standard battery cabinets (20 x 94 Ah), dimensions: lxhxp 600x1635x800 (mm).

TRIMOD
ACCESSORIES

MetaSystem ENERGY

POWER accessories	Item code
Three phase isolation transformer 10KVA	PAT0020
Three phase isolation transformer 16KVA	PAT0021
Three phase isolation transformer 20KVA	PAT0022
Three phase isolation transformer 30KVA	P4246D
Single phase isolation transformer 10KVA	P4245A
Single phase isolation transformer 16KVA	P4245B
Single phase isolation transformer 20 KVA	P4245C

TRIMOD accessories 8 kVA → 30 kVA	Item code
Power Cabinet (empty) No. 3 power slots, No. 12 battery slots. Maximum power 10kVA.	PTH0001
Power Cabinet (empty) No. 6 power slots, No. 8 battery slots. Maximum power 45kVA.	PTH0027
Power Cabinet (empty) No. 9 power slots, No. 0 battery slots. Maximum power 30kVA.	PTH0054
power upgrade 2.7kVA	PAT0005
power upgrade 3.4kVA.	PAT0007

TRIMOD accessories 45 kVA → 60 kVA	Item code
Power Cabinet (empty) No. 9 power slots, No. 0 battery slots. Maximum power 45kVA.	PTH0067
Power Cabinet (empty) No. 12 power slots, No. 0 battery slots. Maximum power 60kVA.	PTH0069
Power upgrade 5kVA.	PAT0009
Extra Battery charger	PAM00840

Battery accessories	Item code
Modular Battery Cabinet (empty) No. 16 battery slots.	PTH0004
Modular Battery Cabinet (empty) No. 20 battery slots.	PTH0016
Standard Battery cabinet (No. 20 Long Life battery 94ah)	PAT0054
Battery modules (No. 5 Panasonic batteries x 7.2Ah) . to be installed in multiples of 4.	PAT0001
Battery modules (allow No. 5 Panasonic batteries x 9Ah). to be installed in multiples of 4.	PAT0003

For more details on hardware and software accessories, go to pages 70-95.

TRIMOD

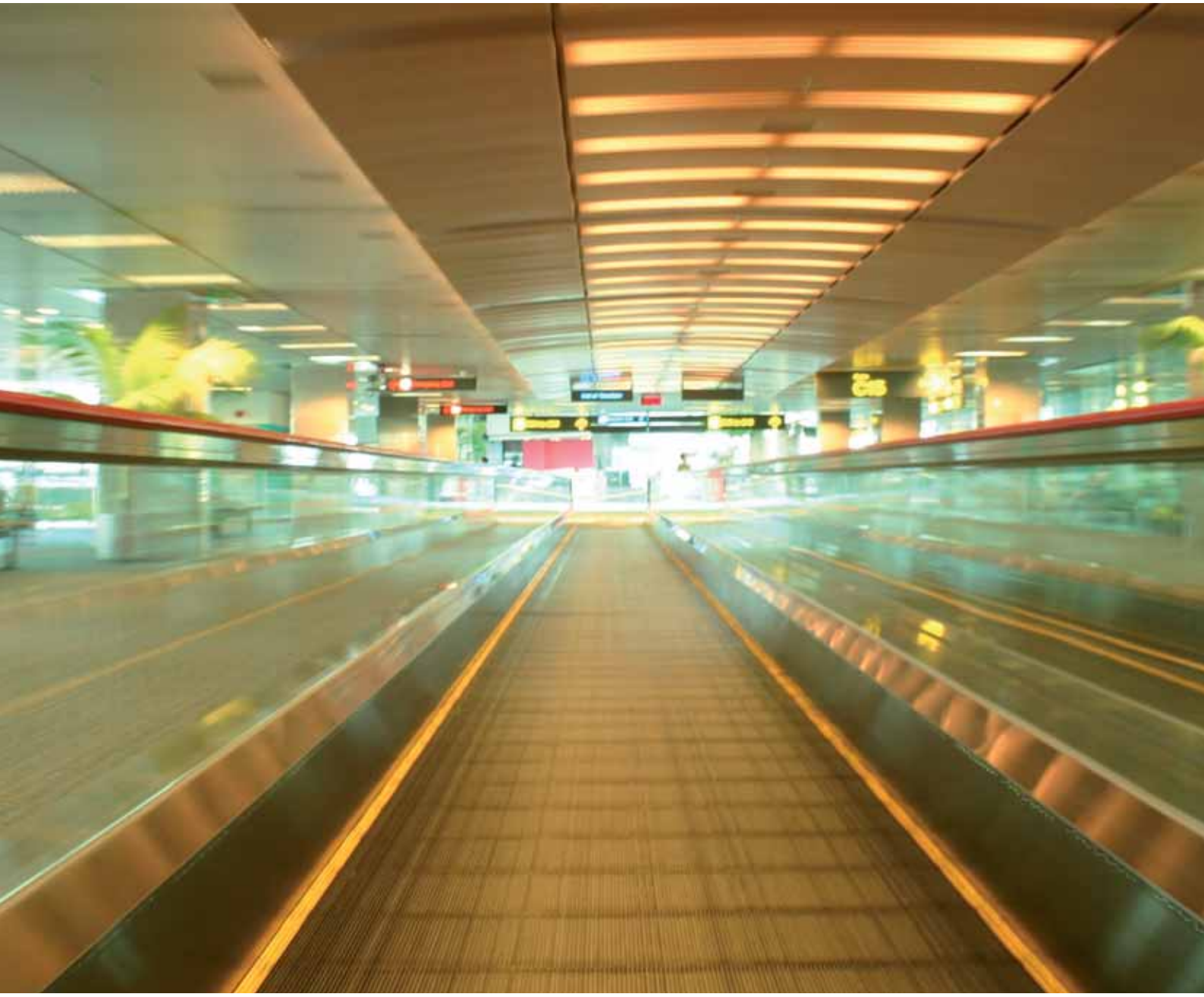
TECHNICAL FEATURES

MODEL	TRIMOD® 8	TRIMOD® 10	TRIMOD® 16	TRIMOD® 20
GENERAL CHARACTERISTICS				
Power Rating	2,7 kVA	3,4 kVA	2,7 kVA	3,4 kVA
Technology	On Line Double Conversion VFI-SS-111			
System Design	Modular, scalable & redundant UPS system in a single cabinet			
INPUT CHARACTERISTICS				
Input Connections	230V 1PH+N,400V 3PH +N	230V 1PH+N,400V 3PH +N	230V 1PH+N,400V 3PH +N	230V 1PH+N,400V 3PH +N
Input Frequency	50-60 Hz ±2% Autosensing			
Input Voltage Range	400V +15% / -20% 230V +15% / -20%	400V +15% / -20% 230V +15% / -20%	400V +15% / -20% 230V +15% / -20%	400V +15% / -20% 230V +15% / -20%
Input Current Distortion	3%			
Genset Compatibility	TRIMOD® can be set up so as to achieve synchronism between the input and output frequency even for wider frequency ranges, ±14%.			
Input Power Factor	> 0.99			
OUTPUT CHARACTERISTICS				
Rated Power	8kVA / 6,4kW	10kVA / 8kW	16kVA / 12,8kW	20kVA / 16kW
Rated Output Voltage	230V, 400V 3F +N	230V, 400V 3F +N	230V, 400V 3F +N	230V, 400V 3F +N
Efficiency at Full Load	95%			
Output Frequency (nominal)	50 / 60 Hz user adjustable ±1 Hz			
Crest Factor	1:3,5			
Output Voltage Tolerance	±1%			
Overload Operation	100 seconds @ 125% and 30 seconds @ 150%			
Efficiency in Eco Mode Status	99%			
Bypass	Automatic by-pass & Maintenance by-pass			
BATTERY CHARACTERISTICS				
Battery Module	Battery modules are designed to be easily placed into the rack (Plug n' play)			
Battery Type / String Voltage	VRLA - AGM / 240 Vdc (Internal redundant strings)			
Battery Runtime	Configurable, Scalable both internal and with additional battery cabinets			
Battery Recharge	Smart Charger technology. Advanced three charging steps			
COMMUNICATIONS & MANAGEMENT				
LCD Display	4 lines by 20 characters for real time monitoring of UPS status, 4 menu-driven interface buttons, 4 status at a glance LEDs			
Communication Ports	Two RS232 Serial Ports, one Port with logic contacts, four outputs with clean contacts			
Emergency Power Off (EPO)	Yes			
Remote Mangement	Available			
PHYSICAL CHARACTERISTICS				
Height / Widht / Depht	1.345 mm / 414 mm / 628 mm			
Installed Power Modules	3	3	6	6
Installable Battery Modules	Up to 12	Up to 12	Up to 8	Up to 8
Net Weight	110 Kg	110 Kg	130 Kg	130 Kg
ENVIROMENTAL SPECIFICATIONS				
Temperature / Humidity	0 - 40 °C / 20 - 80%			
Audible Noise at 1 meter	46 dBA	46 dBA	46 dBA	46 dBA
Heat Dissipation (full load)	1.091 BTU / h	1.364 BTU / h	2.183 BTU / h	2.729 BTU / h
CERTIFICATIONS				
Certifications	EN62040-2, EN / IEC 62040-3, EN / IEC 62040-1-1			
Standard Warranty	Repair or replace 2 year			
SERVICE				
Installation	User capable, Modular construction plus power rack and battery installation of the "plug and play"			
Maintenance	User capable, optional factory service available			
Serviceability Features	Advanced Diagnostic features on LCD panel			

MODEL	TRIMOD® 30	TRIMOD® 45	TRIMOD® 60
GENERAL CHARACTERISTICS			
Power Rating	3,4 kVA	5 kVA	5 kVA
Technology	On Line Double Conversion VFI-SS-111		
System Design	Modular, scalable & redundant UPS system		
INPUT CHARACTERISTICS			
Input Connections	400V 3PH + Neutral	400V 3PH + Neutral	400V 3PH + Neutral
Input Frequency	50-60 Hz ±2% Autosensing		
Input Voltage Range	400V +15% / -20%	400V +15% / -20%	400V +15% / -20%
Input Current Distortion	3%		
Genset Compatibility	TRIMOD® can be set up so as to achieve synchronism between the input and output frequency even for wider frequency ranges, ±14%.		
Input Power Factor	> 0.99		
OUTPUT CHARACTERISTICS			
Rated Power	30kVA / 24kW	45kVA / 36kW	60kVA / 48kW
Rated Output Voltage	400V 3PH+N	400V 3PH+N	400V 3PH+N
Efficiency at Full Load	95%		
Output Frequency (nominal)	50 / 60 Hz user adjustable ±1 Hz; ±0,5 Hz		
Crest Factor	1:3,5		
Output Voltage Tolerance	±1%		
Overload Operation	100 seconds @ 125% and 30 seconds @ 150%		
Efficiency in Eco Mode Status	99%		
Bypass	Automatic by-pass & Maintenance by-pass		
BATTERY CHARACTERISTICS			
Battery Module	Battery modules are designed to be easily placed into the rack (Plug n' play)		
Battery Type / String Voltage	VRLA - AGM / 240 Vdc (internal redundant strings)		
Battery Runtime	Configurable, Scalable both internal and with additional battery cabinets		
Battery Recharge	Smart Charger technology. Advanced three charging steps		
COMMUNICATIONS & MANAGEMENT			
LCD Display	4 lines by 20 characters for real time monitoring of UPS status, 4 menu-driven interface buttons, 4 status at a glance LEDs		
Communication Ports	2 RS232 Serial Ports, 1 Port with logic contacts, 4 outputs with clean contacts		
Emergency Power Off (EPO)	Yes		
Remote Mangement	Available		
PHYSICAL CHARACTERISTICS			
Height / Widht / Depht	1.345 mm / 414 mm / 628 mm	1.645 mm / 414 mm / 628 mm	
Installed Power Modules	9	9	12
Installable Battery Modules	up to 16	up to 20	up to 20
Net Weight	154 Kg	165 Kg	194 Kg
ENVIROMENTAL SPECIFICATIONS			
Temperature / Humidity	0 - 40 °C / 20 - 80%		
Audible Noise at 1 meter	46 dBA	46 dBA	46 dBA
Heat Dissipation (full load)	4.094 BTU / h	6.141 BTU / h	8.189 BTU / h
CERTIFICATIONS			
Certifications	EN62040-2, EN / IEC 62040-3, EN / IEC 62040-1-1		
Standard Warranty	Repair or replace 2 year		
SERVICE			
Installation	User capable, Modular construction plus power rack and battery installation of the "plug and play"		
Maintenance	User capable, optional factory service available		
Serviceability Features	Advanced Diagnostic features on LCD panel		

MODULAR SINGLE PHASE VFI

MEGALINE



Not only do the MegaLine UPS offer all the usual features of the best online double conversion products, they also offer top-of-the class performance and functions. They are available in two families, with either a single or a double cabinet.

The 4 single cabinet models can supply from 1250 to 5000 VA, and can house a maximum of 4 power boards and 4 battery kits. Additional batteries can be housed in bespoke cabinets that are easily connected up thanks to their standard pre-connectivity for extended runtimes. The 5 double cabinet models can supply from 5000 to 10000 VA. They can house up to 8 power boards 1250 VA each one , and 10 battery kits in their external battery cabinet, which also provides space for 1 extra battery charger. Extra battery cabinets, identical to the standard one supplied, can be added to extend runtime even further.

Class A/B (immunity emission)

All the MegaLine models comply with the most stringent standards in terms of both emission and immunity to electromagnetic interference so they can be used for any application, in either civil or industrial environments

MEGALINE
DIAGNOSTICS

Input - Output

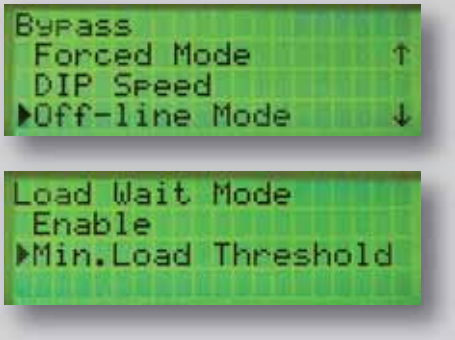
The MegaLine's LCD display is able to give you all the information you need to manage your UPS correctly without the need for a PC connection and the relative interface software. What's more, all the settings you may need can be programmed using the display at the time of installation.
The INPUT section and OUTPUT section submenus keep the user informed of all the sensitive data concerning the UPS operation. The active and apparent input and output power, the input and output voltage and current, the frequency, the crest factor and the power factor can be consulted at any time during mains operation by simply navigating in two menus

Batteries

The BATTERIES menu provides important information both concerning the current status of the batteries (charging voltage, residual capacity) and also a battery log. The number of full discharges, the hours of use, the type of calibration in use, any extended runtime kits or extra battery chargers fitted, are all fundamental parameters when assessing the life and usage of the batteries and for scheduling their replacement. It is also possible to make a "Battery Calibration", where the typical discharge parameters for the batteries in use are acquired so this data can be applied to get a very accurate calculation of the remaining runtime and recharge time.

Programming

With the MegaLine's LCD display, it is very simple to schedule the automatic switching on and off of the UPS, without the need to connect up a computer.
Even battery calibration and testing can be scheduled. A total of 16 programming events can be stored in its memory with a Daily, Weekly, Monthly schedule or On command.



Bypass

The BYPASS can also be scheduled to operate in a variety of ways.
• Off-line: energy saving;
• Load waiting: the UPS switches on when the load exceeds the threshold set on the panel;
• Forced bypass: the UPS is excluded from the system.
The delay before intervention can also be adjusted to allow for repeated peaks of consumption by the load by modifying the speed of the dipswitch (e.g. for laser printers or photocopying machines).

Redundancy

N+X redundancy, on the other hand, is a warning function: if the parameter X=1,2 etc is set, the power of one module is reserved exclusively for redundancy and a warning signal is provided should the load exceed the power available. For example: MegaLine 3750 - Redundancy N+1 - load 2100 VA. 1250 VA of the available 3750 VA is redundant, whilst the remaining 2500 VA is for use by the load. Should the load increase in excess of 2500 VA, the UPS will signal that redundancy is no longer available but continue to supply the load correctly.

MEGALINE
ALARMS AND SIGNALS

An acoustic signal and high-visibility flashing on the backlit front panel ensure that any alarm signal is noticed immediately. The signals can be split into various categories based on their severity:

GREEN & NOT FLASHING - Normal Operation
- Normal operation, no anomaly

YELLOW & FLASHING - Battery Mode
- Battery operation, accompanied by a slow, intermittent alarm signal, which can be silenced

RED & FLASHING - Warning (together with an acoustic alarm signal)
- Operation blocked
- Output voltage anomaly

RED & NOT FLASHING - Severe alarm (together with an acoustic alarm signal)
- Failure of one or more power modules
- Incorrect connection of input neutral
- Overload

The events log can be accessed from the front panel and can store up to 192 successive events, complete with the date and time they took place. Self-diagnostics and the record of events speed-up the identification of hardware faults or UPS operating anomalies (overload, high temperature, etc.), optimizing the restore of the equipment. The internal clock is adjusted by default and also manages daylight saving / standard time changes automatically.

A slow intermittent alarm signal, which can be silenced, and high-visibility yellow flashing of the entire front panel informs the user that the UPS is operating on battery power.

During the discharge stage, the MegaLine indicates:
- **the percentage of residual charge;**
- **the actual amount of runtime remaining;**
- **output power and voltage .**

When the MegaLine is recharging batteries, it indicates the percentage of charge available in real time.

MEGALINE

SINGLE CABINET

Model	Nominal power kVA	Active power kW	Runtime 80% load (min.)	N° Cabinet	Net weight(Kg)	item code
MEGALINE 1250	1,25	0,875	11	1	23,5	P4201N
MEGALINE 2500	2,5	1,75	11	1	34	P4202N
MEGALINE 3750	3,75	2,625	11	1	43	P4203N
MEGALINE 5000	5	3,5	11	1	53	P4204N

MEGALINE

DOUBLE CABINET

Model	Nominal power kVA	Active power kW	Runtime 80% load (min.)	N° Cabinet	Net weight(Kg)	item code
MEGALINE 5000/2	5	3,5	11	2	24 + 50	P4205N
MEGALINE 6250/2	6,25	4,375	11	2	26,5 + 57,5	P4206N
MEGALINE 7500/2	7,5	5,25	11	2	29 + 65	P4207N
MEGALINE 8750/2	8,75	6,125	11	2	31,5 + 72,5	P4208N
MEGALINE 10000/2	10	7	11	2	34 + 80	P4209N

MEGALINE
ACCESSORIES

MetaSystem ENERGY

Model	Nominal Power	Active Power	Runtime 50%	Runtime 80%	Item code	Dimension L x h x p (mm)
MegaLine 1250	1.250 VA	875 W	20′	11′	P4201N	270 x 475 x 570
MegaLine 2500	2.500 VA	1.750 W	20′	11′	P4202N	270 x 475 x 570
MegaLine 3750	3.750 VA	2.625 W	20′	11′	P4203N	270 x 475 x 570
MegaLine 5000	5.000 VA	3.500 W	20′	11′	P4204N	270 x 475 x 570
MegaLine 5000/2	5.000 VA	3.500 W	20′	11′	P4205N	2x (270 x 475 x 570)
MegaLine 6250/2	6.250 VA	4.375 W	20′	11′	P4206N	2x (270 x 475 x 570)
MegaLine 7500/2	7.500 VA	5.250W	20′	11′	P4207N	2x (270 x 475 x 570)
MegaLine 8750/2	8.750 VA	6.125 W	20′	11′	P4208N	2x (270 x 475 x 570)
MegaLine 0000/2	10.000 VA	7.000 W	20′	11′	P4209N	2x (270 x 475 x 570)

Accessories	Item code
Extra Battery cabinet	PAM0003
Runtime extension kit for inverter cabinet	PAM0018
Runtime extension kit for battery cabinet	PAM0020
CB 36 Battery charger	PAM0043
Extended cable for battery/inverter cabinets tower configuration	PAM0048
Y-cable for the battery cabinet to battery cabinet connection	PAM0031
Manual bypass for single cabinet units	PAM0023
Manual bypass for double cabinet units	PAM0024
Power upgrade	PAM0027
Relay contacts hardware support	PAM0009

MEGALINE

SINGLE CABINET

MODELS	MEGALINE 1250	MEGALINE 2500	MEGALINE 3750	MEGALINE 5000
GENERAL CHARACTERISTICS				
Apparent Power	1250 VA	2500 VA	3750 VA	5000 VA
Actual Power	875 W	1750 W	2625 W	3500 W
Max scalability	5000 VA			
Max scalability	3500 W			
Technology	On line double conversion VFI-SS-11			
UPS architecture	Modular, Scalable, Redundant N+X with 1250VA power boards, housed in one cabinet			
INPUT				
Input rating	230 V			
Input voltage range	184 V ÷ 264 V at 100% of the load			
Min. mains voltage	100 V at 50% of the load			
Input current distortion	< 3%			
Input Power Factor	> 0.99 from 20% of the load			
Input frequency	50 Hz / 60 Hz ± 2% self-sensing			
OUTPUT				
Output voltage	230 V ± 1%			
Output frequency	50 Hz / 60 Hz synchronised			
Output voltage distortion	< 1% with non linear load			
Waveform	Sinusoidal			
Crest factor	3,5 : 1			
Mains efficiency	92% V at 100% of the load			
Overload capacity	300% for 1 s – 200% for 5 s – 150% for 30 s			
AUTONOMY				
Autonomy at 50% load	20’			
Autonomy at 80% load	11’			
Autonomy scalability	Yes			
STANDARD FEATURES				
Bypass	Automatic Static and Electromechanical synchronised internal (for overloads and malfunctions).			
Signallings and Alarms	Big alphanumerical 4-line display, multicolour status indicator, acoustic signalling			
UPS Communicator Software	1 RS 232 port, 2 logic level ports			
Software UPS Communicator	Free download from the web: www.metasystemenergy.com			
Protections	Electronic against overloads, short circuits and excessive battery discharge. Function shutdown for the end of autonomy. Switch-on surge limiter. Correct neutral connection sensor. Back-feed protection (safety electrical insulation of the input plug when running on battery). EPO contact (total switch-off in an emergency)			
Input / output mains connection	socket german standard / Terminal connector with universal multisocket (Italian / socket german standard)			
MECHANICAL CHARACTERISTICS				
Net weight	23,5 Kg	34 Kg	43 Kg	53 Kg
Dimensions (wxhxd)	270 x 475 x 570 mm			
Installed power boards	1	2	3	4
Power expansion slots available	3	2	1	-
Battery kits installed	1	2	3	4
Autonomy expansion slots available	3	2	1	-
AMBIENT CONDITIONS				
Working temperature	0°C ÷ 40°C			
Relative humidity	20% ÷ 80% not condensing			
Audible noise at 1 m	< 40 dBA			
CERTIFICATIONS				
Standards	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3			
WARRANTY				
Standard warranty	2 years with On Site formula batteries included, work done at the place of installation			

MEGALINE
DOUBLE CABINET

MetaSystem ENERGY

MODELS	MEGALINE 5000 / 2	MEGALINE 6250 / 2	MEGALINE 7500 / 2	MEGALINE 8750 / 2	MEGALINE 10000 / 2
GENERAL CHARACTERISTICS					
Apparent Power	5000 VA	6250 VA	7500 VA	8750 VA	10000 VA
Actual Power	3500 W	4375 W	5250 W	6125 W	7000 W
Max scalability	10000 VA				
Max scalability	7000 W				
Technology	On line double conversion VFI-SS-11				
UPS architecture	Modular, Scalable, Redundant N+X with 1250VA power boards, housed in one cabinet				
INPUT					
Input rating	230 V				
Input voltage range	184 V ÷ 264 V at 100% of the load				
Min. mains voltage	100 V at 50% of the load				
Input current distortion	< 3%				
Input Power Factor	> 0.99 from 20% of the load				
Input frequency	50 Hz / 60 Hz ± 2% self-sensing				
OUTPUT					
Output voltage	230 V ± 1%				
Output frequency	50 Hz / 60 Hz synchronised				
Output voltage distortion	< 1% with non linear load				
Waveform	Sinusoidal				
Crest factor	3,5 : 1				
Mains efficiency	92% V at 100% of the load				
Overload capacity	300% for 1 s – 200% for 5 s – 150% for 30 s				
AUTONOMY					
Autonomy at 50% load	20’				
Autonomy at 80% load	11’				
Autonomy scalability	Yes				
STANDARD FEATURES					
Bypass	Automatic Static and Electromechanical synchronised internal (for overloads and malfunctions).				
Signallings and Alarms	Big alphanumerical 4-line display, multicolour status indicator, acoustic signalling				
UPS Communicator Software	1 RS 232 port, 2 logic level ports				
Software UPS Communicator	Free download from the web: www.metasystemenergy.com				
Protections	Electronic against overloads, short circuits and excessive battery discharge. Function shutdown for the end of autonomy. Switch-on surge limiter. Correct neutral connection sensor. Back-feed protection (safety electrical insulation of the input plug when running on battery). EPO contact (total switch-off in an emergency)				
Input / output mains connection	socket german standard / Terminal connector with universal multisocket (Italian / socket german standard)				
MECHANICAL CHARACTERISTICS					
Net weight	24 + 50 Kg	26,5 + 57,5 Kg	29 + 65 Kg	31,5 + 72,5 Kg	34 + 80 Kg
Dimensions (wxhxd)	2 x (270 x 475 x 570) mm				
Installed power boards	4	5	6	7	8
Power expansion slots available	4	3	2	1	-
Battery kits installed	4	5	6	7	8
Autonomy expansion slots available	6	5	4	3	2
AMBIENT CONDITIONS					
Working temperature	0°C ÷ 40°C				
Relative humidity	20% ÷ 80% not condensing				
Audible noise at 1 m	< 40 dBA				
CERTIFICATIONS					
Standards	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3				
WARRANTY					
Standard warranty	2 years with On Site formula batteries included, work done at the place of installation				

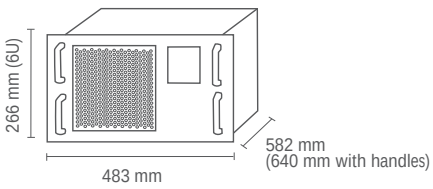
MEGALINE RACK

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	N° Cabinet	Net weight (Kg)	Item code
MEGALINE RACK 1250	1,25	0,875	11	1	23,5	P4482N
MEGALINE RACK 2500	2,5	1,75	11	1	34	P4483N
MEGALINE RACK 3750	3,75	2,625	11	1	43	P4484N
MEGALINE RACK 5000	5	3,5	11	1	53	P4485N

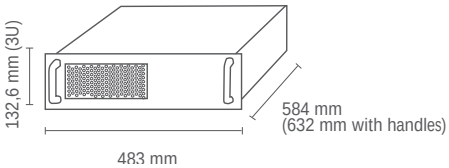
MegaLine Rack accessories	Description	Item Code
PW 1250	Power upgrade	**PAM0027**
KB MegaLine/1	Runtime extension kit for inverter cabinet	**PAM0018**
KB MegaLine/1	Runtime extension kit for inverter cabinet installed	**PAM0019**
KB MegaLine/2	Runtime extension kit for battery cabinet	**PAM0020**
KB MegaLine/2	Runtime extension kit for battery cabinet installed	**PAM0021**
BATTERY MegaLine Rack 36 V	Extra battery cabinet in Rack format	**PAR0002**
BP/1	Manual bypass for single cabinet units	**PAM0023**
CB 36	Battery charger	**PAM0043**
CB 36	Battery charger installed	**PAM0044**
Kit Rail guides Rack 6U	Telescopic rail guides Rack 6U	**PAR0018**
Relay Interface Kit	Relay contacts hardware support	**PAM0009**

for more details on hardware and software accessories, go to pages 70-95.

MegaLine Rack



Battery MegaLine Rack 36V



Cables for connecting to the MegaLine Rack are supplied

MODEL	MEGALINE Rack 1250	MEGALINE Rack 2500	MEGALINE Rack 3750	MEGALINE Rack 5000
SPECIFICATIONS				
Nominal Power	1250 VA	2500 VA	3750 VA	5000 VA
Active Power	875 W	1750 W	2625 W	3500 W
Max Power Scalability	5000 VA			
Max Power Scalability	3500 W			
Technology	Online double conversion VFI-SS-11			
UPS Architecture	Modular, Scalable, Redundant N+X with 1250 VA power boards, contained in a cabinet			
INPUT				
Input Voltage	230 V			
Input Voltage Range	184 V ÷ 264 V @ 100% load			
Minimum Operating Voltage (on mains power)	100 V @ 50% load			
Input Current THD	< 3%			
Input Power Factor	> 0.99 from 20% load			
Input Frequency	50 Hz / 60 Hz ± 2% autosensing			
OUTPUT				
Output Voltage	230 V ± 1%			
Output Frequency	50 Hz / 60 Hz synchronized			
Output Voltage THD	< 1% with non-linear load			
Wave form	Sinusoidal			
Crest Factor	3.5 : 1			
Efficiency on mains (AC / AC Online)	92% @ 100% load			
Overload capacity	300% for 1 s - 200% for 5 s - 150% for 30 s			
BATTERIES				
Runtime @ 50% load	20’			
Runtime @ 80% load	11’			
Runtime Extendibility	Yes			
GENERAL SPECIFICATIONS				
Bypass	Static and electromechanical, internally synchronized, automatic (for overload or anomaly)			
Signals and Alarms	Wide 4-line alphanumeric display, multicolour status indicator, acoustic signalling			
Communication Ports	N.1 RS232 port, N.2 Logic level ports			
UPS Communicator Software	Download free of charge from the website (www.metasystemenergy.com)			
Protection	Electronic protection against overloads, short circuits and excessive battery discharge. Operation blocked at end of runtime. Sensor for correct neutral connection. Inrush limitation when switching on. Back-feed protection (electrical insulation for the safety of the input plug when running in battery mode). EPO contact (emergency power off)			
Input / Output Connectivity	socket german standard / Screw connector with 4-socket multiple extension cord (Italian / socket german standard)			
MECHANICAL SPECIFICATIONS				
Net Weight	23.5 Kg	34 Kg	43 Kg	53 Kg
Dimensions (W x H x D)	483 x 266(6U) x 582 mm			
Power Modules Installed	1	2	3	4
Power Scalability Slots Available	3	2	1	-
Battery Kits Installed	1	2	3	4
Runtime Extension Slots Available	3	2	1	-
ENVIRONMENTAL DATA				
Working Temperature	0 °C ÷ 40 °C			
Relative Humidity	20% ÷ 80% non condensing			
Acoustic Noise @ 1 m	< 40 dBA			
STANDARDS				
Standards	EN 62040-1-1, EN 62040-2, EN 62040-3			
GUARANTEE				
Guarantee	2 years, including batteries			

SINGLE PHASE VFI

WHAD

UPS WHAD is the evolution of the single-phase online double conversion UPS for small and medium power applications. As Metasystem Energy's UPS, WHAD stands out for its advanced technology and also for its attractive and pioneering design. It is available in 800 VA to 6000 VA versions.

The **UPS WHAD** devices with on-line technology (VFI) make a double conversion of the electric current on the input (AC-DC-AC).

The output remains absolutely independent of the input both for voltage and frequency value. If the input voltage is no longer suitable, the energy required for the second conversion is drawn from the batteries.

All this takes place without actuation time. The double conversion system becomes more flexible and reliable by using an automatic by-pass circuit. The by-pass will cut-out the UPS if overloads or faults occur. In short, the online double conversion UPS guarantees the highest protection against any electrical interference.

This means that it is ideal for protecting servers and company networks, storage systems, industrial automation, security and video surveillance systems.

WHAD
TOTAL PROTECTION

WHAD 800XL-1000XL-1500XL WITH BACK-UP TIME EXTENDIBILITY

Meta System has designed these WHAD models specifically for the protection of small computer networks, servers for telephone/ data systems, office and automation equipment. For a very competitive price these models allow a high power quality protection for low power equipment. WHAD utilizes Online Double Conversion (VFI) technology to provide superior performance in a low range where typically Line Interactive (VI) technology is used.

With a small footprint and a slim design, these low power models of the WHAD family are unobtrusive when placed below the operator's desk.
For maximum ease of installation, these UPS have IEC plugs on the back, in addition to the RS232 serial link. A three-socket multiple extension cord is delivered along with the product.

WHAD 2000EXT-2500EXT WITH BACK-UP TIME EXTENDIBILITY

Powerful and compact, the midrange members of the WHAD family sponsor a power level of 2000VA to 2500VA.
All the models, except Whad 1500VA, have the possiblity to expand the back-up time just adding external
battery cabinets.

Based on the traditional Online Double Conversion (VFI) technology of Meta System, these models are the ideal solution to provide safe and high quality power to any type of electronic load, from workstations to servers, from industrial equipment to medical and safety equipment.

WHAD 3000-4000-5000-6000

The high-power range models of the WHAD family represent the state of the art of the technology for performance and power density, up to 6000VA in a single compact cabinet.
The power electronics of these models guarantees top reliability as well as perfect quality of the power fed to the load, thanks to the use of Online Double Conversion (VFI) technology.

All the models are fitted on the back with a logic level port that can be connected to the Relay Interface Kit.
Moreover, a slot is provided for internal CS121 SK or CS121B SK SNMP communication cards.
These units can be connected to an external maintenance bypass switch which is designed as an add-on to the output connector in the back.

ALARMS AND SIGNALS

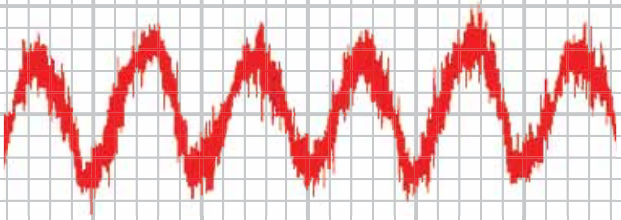
An acoustic signal and high-visibility flashing on the backlit front panel ensure that any alarm signal is noticed immediately. The signals are coded into various categories based on their severity (semaphore code):

GREEN & NOT FLASHING
Normal Operation
Normal operation, no anomaly.

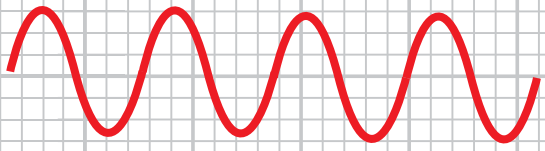
YELLOW & FLASHING
Battery Mode
Battery operation, accompanied by a slow, intermittent acoustic alarm signal, which can be silenced.

RED & FLASHING
Warning
(together with an acoustic alarm signal)
- General Fault / Failure
- Incorrect connection of neutral on input
- Overload

RED & NOT FLASHING
Severe Alarm
(together with an acoustic alarm signal)
- Operation blocked
- Output voltage anomaly



DISTURBED LINE



STABILIZED LINE

WHAD

WHAD 800XL-1000XL-1500XL

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	N° Cabinet	Net weight (Kg)	Item code
WHAD 800XL	0,8	0,56	17	1	12	P4HO01050
WHAD 1000XL	1	0,7	13	1	12	P4HO01080
WHAD 1500XL	1,5	1,05	8	1	12	P4HO01000

WHAD accessories	Description	Item Code
Battery cabinet	Extra battery cabinet 160 x 319 x 402 [mm]	**PAO0009**

for more details on hardware and software accessories, go to pages 70-95.

runtime table	Nominal Power [VA]	Runtime @ 80% load	Battery Cabinet	Splitter Cable
WHAD 800XL	800	1 h 25 min	1	0
		2 h 50 min	2	1
WHAD 1000XL	1000	1 h 05 min	1	0
		2 h 10 min	2	1
WHAD 1500XL	1250	50 min	1	0
		1 h 40 min	2	1

CONNECTIVITY

These WHAD models come complete with a serial port so you can use UPS Communicator software for local or remote shutdown. There is also a magneto-thermal switch on the back of the cabinet for an easy resetting of the appliance. The various versions are also supplied with a useful, universal Italian/socket german standard, 3-socket output extension cord.

All in one

Electronic circuit board: control, PFC, booster, inverter, battery charger, input-output filter, bypass.

Dual-standard (Italian/Schuko)

MODELS	WHAD 800XL	WHAD 1000XL	WHAD 1500XL
GENERAL SPECIFICATIONS			
Rated / Active power	800 VA / 560 W	1000 VA / 700 W	1500 VA / 1050 W
Technology	On line Double Conversion VFI-SS-111		
Waveform	Sinusoidal		
INPUT SPECIFICATIONS			
Input voltage	230 V		
Input frequency	50-60 Hz ±2% Autosensing		
Input voltage range	184 V to 265 V at 100% of the load		
Input power factor	>0.99		
THD Input voltage range	3%		
OUTPUT SPECIFICATIONS			
Output voltage	230V ± 1%		
Output frequency (rated)	50 / 60 Hz synchronized		
Crest factor	3,5 : 1		
THD Output voltage	1%		
Permissible overload	300% for 1 sec, 200% for 5 sec, 150% for 30 sec		
Bypass	Electromechanical synchronized internal automatic (for overloads and operating faults)		
BATTERIES			
Autonomy expansion	Yes		
Type / Voltage set of batteries	VRLA - AGM 48Vdc		
50% load autonomy	29 min	23 min	14 min
80% load autonomy	17 min	13 min	8 min
COMMUNICATION & MANAGEMENT			
Display and Indicators	Multicoloured LED status indicator, alarms and acoustic signals		
Communication ports	1 RS232 serial port		
Remote management	UPS Communicator software can be downloaded free of charge from www.metasystemenergy.com web site		
PHYSICAL SPECIFICATIONS			
Dimensions H x L x W	355 mm x 88 mm x 390 mm		
Battery cabinet dimensions H x L x W	319 mm x 160 mm x 402 mm	319 mm x 160 mm x 402 mm	319 mm x 160 mm x 402 mm
Net weight	12 Kg	12 Kg	12 Kg
ENVIRONMENTAL CONDITIONS			
Operating temperature / humidity	0 ÷ 40 °C / 20-80%		
Maximum noise audible 1 m from unit	<40 dBA		
Thermal dissipation	150 BTU / h	190 BTU / h	287 BTU / h
CONFORMITY			
Certifications	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3		
Standard Warranty	2 years, batteries included		

WHAD

WHAD 2000-2500 WITH BACK-UP TIME EXTENDIBILITY

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	N° Cabinet	Net weight (Kg)	Item code
WHAD 2000ext	2	1,4	10	1	23	P43206N
WHAD 2500ext	2,5	1,75	8	1	23	P43207N

WHAD accessories	Description	Item Code
Battery cabinet	Extra battery cabinet 160 x 319 x 402 [mm]	**PAO0009**
Splitter cable	Y-cable for the battery cabinet to battery cabinet connection	**PAO0015**
Relay interface kit	Relay contacts hardware support (only for models from 2000 to 2500 VA)	**PAM0009**

If extended back-up time is required, additional batteries can be easily housed in the dedicated cabinets. The UPS is designed to maximise the battery use, adapting the thresholds to the amount of load, avoiding deep discharge, lengthening battery life and optimising the management of back-up time.

runtime table	Nominal Power [VA]	Runtime @ 80% load	Battery Cabinet	Splitter Cable
WHAD 2000 EXT	2000	37 min	1	0
		1 h 05 min	2	1
WHAD 2500 EXT	2500	28 min	1	0
		50 min	2	1

for more details on hardware and software accessories, go to pages 70-95

MODELS	WHAD 2000ext	WHAD 2500ext
GENERAL SPECIFICATIONS		
Rated / Active power	2000 VA / 1400 W	2500 VA / 1750 W
Technology	On line Double Conversion VFI-SS-111	
Waveform	Sinusoidal	
INPUT SPECIFICATIONS		
Input voltage	230 V	
Input frequency	50-60 Hz ±2% Autosensing	
Input voltage range	184 V to 265 V at 100% of the load	
Input power factor	3%	
THD Input voltage range	>0.99	
OUTPUT SPECIFICATIONS		
Output voltage	230V ± 1%	
Output frequency (rated)	50 / 60 Hz synchronized	
Crest factor	3,5 : 1	
THD Output voltage	1%	
Permissible overload	300% for 1 sec, 200% for 5 sec, 150% for 30 sec	
Bypass	Electromechanical synchronized internal automatic (for overloads and operating faults)	
BATTERIES		
Autonomy expansion	Yes	
Type / Voltage set of batteries	VRLA - AGM 36Vdc	
50% load autonomy	22 min	16 min
80% load autonomy	10 min	8 min
COMMUNICATION & MANAGEMENT		
Display and Indicators	Multicoloured LED status indicator, alarms and acoustic signals	
Communication ports	1 RS232 serial port, 1 port with logic levels	
Remote management	UPS Communicator software can be downloaded free of charge from www.metasystemenergy.com web site	
PHYSICAL SPECIFICATIONS		
Dimensions H x L x W	460 mm x 160 mm x 425 mm	
Battery cabinet dimensions H x L x W	319 mm x 160 mm x 402 mm	319 mm x 160 mm x 402 mm
Net weight	23 Kg	23 Kg
ENVIRONMENTAL CONDITIONS		
Operating temperature / humidity	0 ÷ 40 °C / 20-80%	
Maximum noise audible 1 m from unit	< 42 dBA	
Thermal dissipation	380 BTU / h	478 BTU / h
CONFORMITY		
Certifications	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3	
Standard Warranty	2 years, batteries included	

WHAD

WHAD 3000-4000-5000-6000

Model	Nominal Power [VA]	active power kW	Runtime @ 80% load	N° Cabinet	Net weight (Kg)	item code
WHAD 3000	3	2,1	12	1	55	P43208N
WHAD 4000	4	2,8	11	1	55	P43209N
WHAD 5000	5	3,5	10	1	65	P43210N
WHAD 6000	6	4,3	10	1	65	P43211N

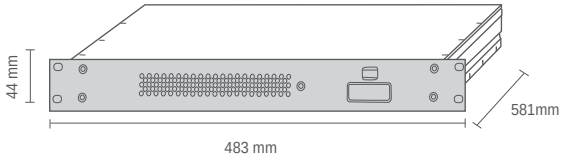
WHAD accessories	Description	Item Code
Relay Interface Kit	Relay contacts hardware support	**PAM0009**
BP/1	Manual bypass for Whad 3000VA / 4000VA	**PAM0023**
BPW	Manual Maintenance Bypass for Whad 5000VA / 6000VA	**PAO0017**

for more details on hardware and software accessories, go to pages 70-95

MODELS	WHAD 3000	WHAD 4000	WHAD 5000	WHAD 6000
GENERAL SPECIFICATIONS				
Rated / Active power	3000 VA / 2100 W	4000 VA / 2800 W	5000 VA / 3500 W	6000 VA / 4200 W
Technology	On line Double Conversion VFI-SS-111			
Waveform	Sinusoidal			
INPUT SPECIFICATIONS				
Input voltage	230 V			
Input frequency	50-60 Hz ±2% Autosensing			
Input voltage range	184 V to 265 V at 100% of the load			
Input power factor	3%			
Input voltage range	>0.99			
OUTPUT SPECIFICATIONS				
Output voltage	230V ± 1%			
Output frequency (rated)	50 / 60 Hz synchronized			
Crest factor	3,5 : 1			
THD Output voltage	1%			
Permissible overload	300% for 1 sec, 200% for 5 sec, 150% for 30 sec			
Bypass	Electromechanical synchronized internal automatic (for overloads and operating faults)			
BATTERIES				
Autonomy expansion	No			
Type / Voltage set of batteries	VRLA - AGM 144Vdc		VRLA - AGM 192Vdc	
50% load autonomy	22 min	20 min	18 min	16 min
80% load autonomy	12 min	11 min	10 min	10 min
COMMUNICATION & MANAGEMENT				
Display and Indicators	Multicoloured LED status indicator, alarms and acoustic signals			
Communication ports	1 RS232 serial port, 1 port with logic levels, 1 slot for mains interface connection (CS121)			
Remote management	UPS Communicator software can be downloaded free of charge from www.metasystemenergy.it web site			
PHYSICAL SPECIFICATIONS				
Dimensions H x L x W	475 mm x 270 mm x 570 mm			
Battery cabinet dimensions H x L x W	-	-	-	-
Net weight	55 Kg	55 Kg	65 Kg	65 Kg
ENVIRONMENTAL CONDITIONS				
Operating temperature / humidity	0 ÷ 40 °C / 20-80%			
Maximum noise audible 1 m from unit	< 40 dBA			
Thermal dissipation	570 BTU / h	760 BTU / h	952 BTU / h	1140 BTU / h
CONFORMITY				
Certifications	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3			
Standard Warranty	2 years, batteries included			

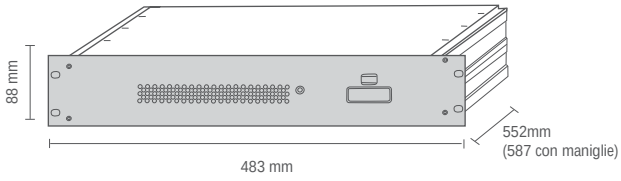
WHAD RACK 1U - 2U

WHAD Rack 1U Rack format



Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
WHAD RACK 800	0,8	0,56	7	10	P4486N
WHAD RACK 1000	1	0,7	11	15,5	P4487N

WHAD Rack 2U Rack format



Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
WHAD RACK 1500	1,5	1,05	15	20,56	P4488N

For both models there is a Battery Rack 2U , for the runtime extension.

accessories	description	item code
Battery 48V per WHAD Rack 1 U	Extra battery cabinet in 19" Rack format (only for WHAD Rack 800 - 1000 VA models)	**PAR0014**
Battery 72V per WHAD Rack 2 U	Extra battery cabinet in 19" Rack format (only for WHAD Rack 1500VA models)	**PAR0015**
Kit rack splitter	Kit splitter cable to connect battery cabinet	**PAR0001**
Kit guide Rack 1U	Telescopic rail guides Rack 1U	**PAR0016**
Kit guide Rack 2U	Telescopic rail guides Rack 2U	**PAR0017**

for more details on hardware and software accessories, go to pages 70-95.

MODELS	WHAD 800 Rack	WHAD 1000 Rack	WHAD 1500 Rack
GENERAL SPECIFICATIONS			
Rated / Active power	800 VA / 560 W	1000 VA / 700 W	1500 VA / 1050 W
Technology	On line Double Conversion VFI-SS-11		
Waveform	Sinusoidal		
INPUT SPECIFICATIONS			
Input voltage	230 V		
Input frequency	50-60 Hz ±2% Autosensing		
Input voltage range	184 V to 265 V at 100% of the load		
Input power factor	3%		
Input voltage range	>0.99		
OUTPUT SPECIFICATIONS			
Output voltage	230V ± 1%		
Output frequency (rated)	50 / 60 Hz synchronized		
Crest factor	3,5 : 1		
THD Output voltage	1%		
Permissible overload	300% for 1 sec, 200% for 5 sec, 150% for 30 sec		
Bypass	Electromechanical synchronized internal automatic (for overloads and operating faults)		
BATTERIES			
Autonomy expansion	Yes		
Type / Voltage set of batteries	VRLA - AGM 48Vdc	VRLA - AGM 48Vdc	VRLA - AGM 72Vdc
50% load autonomy	12 min	18 min	30 min
80% load autonomy	7 min	11 min	15 min
COMMUNICATION & MANAGEMENT			
Display and Indicators	Multicoloured LED status indicator, alarms and acoustic signals		
Communication ports	1 RS232 serial port		
Remote management	UPS Communicator software can be downloaded free of charge from www.metasystemenergy.com web site		
PHYSICAL SPECIFICATIONS			
Dimensions H x L x W	44 (1U) x 483 x 581 mm		88 (2U) x 483 x 552 mm
Battery cabinet dimensions H x L x W	88 (2U) x 483 x 552 mm	88 (2U) x 483 x 552 mm	88 (2U) x 483 x 552 mm
Net weight	10 Kg	15,5 Kg	20,5 Kg
ENVIRONMENTAL CONDITIONS			
Operating temperature / humidity	0 ÷ 40 °C / 20-80%		
Maximum noise audible 1 m from unit	<40 dBA		
Thermal dissipation	150 BTU / h	190 BTU / h	287 BTU / h
CONFORMITY			
Certifications	EN / IEC 62040-1-1, EN / IEC 62040-2, EN / IEC 62040-3		
Standard Warranty	2 years, batteries included		

POWER STATION

DHEA

Designed to support medium power loads and provided with 3 output lines - which can be programmed separately for back-up time management based on a user-designated hierarchy. These UPS were designed to offer the long runtimes needed by businesses, for homes and in multi-storey buildings.

The DHEA can provide long autonomies thanks to its streamlined and very attractive, modular battery pack system, meeting the specific demands of the user.

DHEAs are online double conversion, so they are able to correct mains power problems, offering protection for all the loads connected up to it.

There are many who think UPS are just for the professionals: actually, domestic applications also need support in order to safeguard their continuity of power, just like professional equipment, especially because homeowners are increasingly adopting electronic appliances in order to automate their home and enhance their comfort.

DHEA

A REVOLUTIONARY SYSTEM

The DHEA has an inverter section and battery modules (battery packs) with a stackable design and plug and play connectivity.

The lead batteries contained inside the battery packs are hermetically sealed so they do not emit any gas whatsoever. As a result, they can be used in the home without any need for maintenance.

They are available in versions supplying 1000 / 1500 VA of power, whereas their runtime configuration can be determined according to requirements, even with very long back up times thanks to the system of stackable battery packs, which also gives them a very small footprint. This system means siting your UPS is not a problem should space be an issue (e.g. behind a door), however their very pleasant design means they are attractive even if in full view).

They are also fitted with an input power factor corrector (PFC) and therefore act as a phase advancer, offering benefits in terms of consumption for both the consumer and the electricity supplier.

3 OUTPUT LINES

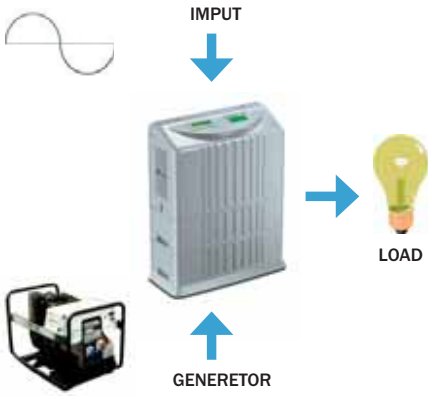
The 1500 version is complete with 3 output lines, including 2 time programmable ones that turn off after a pre-set time during inverter run. In this way the more important loads gain more back up time.

DISPLAY

The 1500 version also has an user-friendly LCD display fitted into the front panel makes monitoring and programming extremely easy and userfriendly. In the DHEA's setup, it is possible to set operating parameters in order to optimise all operation. It is possible to schedule tunr on/off the UPS on and execute battery tests.

Use with a gen-set

The DHEA's design also caters for connection of its electronic section to a gen-set in order to considerably increase system autonomy in case of very lengthy power black outs. Gen-sets, especially low power products, typically provide power with considerable voltage fluctuation together with characteristic frequency instability. The DHEA's input stage was also designed to handle this type of power supply and delivers output voltage with perfectly stable amplitude and frequency.



Hot-swappable battery pack connections

Connecting up to the electronic unit is simple and safe, so that even the less expert among us can transport and install all of the various system parts with total confidence and ease.
Thanks to the hot-swappable system, battery packs can be added or replaced at any time, with no need to switch off the inverter unit, guaranteeing total continuity of power to the load.
The inverter's rated voltage is 72V but this is only present when the module has been connected up. During transport, there's only 36V across the battery pack terminals, safeguarding maximum safety and compliance with current standards. An unlimited number of batteries can be connected up to the electronic unit so you can get exactly the runtime you need.

For all application






DHEA

THE POWER STATION

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
DHEA 1000	1	0,7	da 20 a 7h	4	PHO0057

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
DHEA 1500	1,5	1,05	da 15min a 4h	4	PHO0058

Model	Net weight (Kg)	Item code
BATTERY PACK	16	PHO0001

N. BATTERY PACK	Runtime @ 100 load	
	1000 VA	1500 VA
1	20′	15′
2	48′	32′
3	1 h 20′	50′
4	2 h	1 h 15′
5	2 h 40′	1 h 35′
6	3 h 20′	2 h
7	4 h	2 h 30′
8	5 h	3 h
9	6 h	3 h 30′
10	7 h	4 h

Specifications	DHEA 1000	DHEA 1500
Technology	Online double conversion (VFI)	
Wave form	sinusoidale	
Nominal Power (VA)	1000 VA	1500 VA
Active Power (W)	700 W	1050 W
Input Voltage	230 V	
Input Voltage Range	184 V ÷ 265 V al 100% of the load	
Minimum Operating Voltage (on mains power)	184V with nominal load / 100V al 50% of the nominal load	
Input Frequency	50/60 Hz ± 2% (± 14% in extended range)	
Input Power Factor	> 0.99 all' 20% del of the load	
Output Voltage	230 V ± 1%	
THD Output Voltage	< 1%	
Output Frequency	50/60 Hz ± 1%	
Batteries	2 x 36 V 7,2 Ah stacking Battery Pack	
Acoustic Noise @ 1 m	< 40 dBA	
Net Weight	inverter 4 Kg	battery pack 16 Kg
Dimensions (lxhxp) in mm	inverter 450X309X170	battery pack 450X125X170
Standards	EN 62040 - 1-1, EN 62040-2, EN 62040-3	
Communication Ports	1 RS232 port N.3 dry contact outputs; n. 1 EPO contact	
Output Lines	1 line	3 lines (2 with timer)

UPS DAKER

ON LINE DOUBLE CONVERSION

DK UPS range is available in 1000VA, 2000VA e 3000VA nominal power models based on Online Double Conversion technology and expandable in autonomy by adding external battery cabinets.

DK UPS assures zero transfer time, protection continuity, a perfect sinusoidal output wave form, both on mains and battery operation, for a total protection of any kind of load.

Electronics and batteries are contained only in a 2U rack format.

LINE INTERACTIVE VI

Line interactive technology gives a reliable performance at a very affordable price.

For any Small-Office Home-Office application, UPS with this technology offer the best price/quality ratio for office data security - for a business or for a PC at home.

DAKER DK

DK 1000 / DK 2000 / DK 3000

ADJUSTABLE DISPLAY FOR USE IN TOWER OR RACK

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
DK 1000	1	0,7	10	15	PIO0029
DK 2000	2	1,4	10	28	PIO0030
DK 3000	3	2,1	8	30	PIO0031

Accessories	Description	Item code
BBOX 2U Daker DK 2000-3000	Battery Box containing 12 batteries 7,2ah Dimensions 440 x 176(4U) x 420	**PAO0022**
BBOX 4U Daker DK 1000	Battery Box containing 20 batteries 7,2ah Dimensions 440 x 88(2U) x 650	**PAO0023**
Rail Kit	Installation Kit for 19" Rack	**PAR0020**
Bypass	External Bypass Switch	**PAR0019**

Model	DK 1000	DK 2000	DK 3000
SPECIFICATIONS			
Nominal Power	1000 VA	2000 VA	3000 VA
Active Power	700 W	1400 W	2100 W
Technology	True On-line Double Conversion VFI SS 111		
INPUT			
Input Voltage	230 V		
Input Voltage Range	160V÷288V		
Input Frequency	50Hz / 60 Hz +/- 5% Autosensing		
Input Power Factor	> 0,99 full load		
OUTPUT			
Output Voltage	230 V +/- 1%		
Output Frequency	50 Hz / 60 Hz ± 1Hz		
Wave form	Pure Sinewave THD <3%		
Crest Factor	3:1		
BATTERIES			
Runtime @ 50% load [min]	20'	20'	16'
Runtime @ 80% load [min]	10'	10'	8'
Recharge Time	3 hours to 90%		
GENERAL SPECIFICATIONS			
Signals and Alarms	Led and acoustic signals		
Communication Ports	Standard RS 232 & USB Interfaces		
Communication Slot	for, SNMP Adapters, Dry Contact, Relay Boards, etc etc		
UPS Communicator Software	Download free of charge from the website (www.metasystemenergy.com)		
Protection	Electronic protection against overloads and short circuits. Operation blocked at the end of runtime or overheating Automatic shutdown for protections triggering		
Output Sockets	6 IEC 320		4 IEC 320
MECHANICAL SPECIFICATIONS			
Net Weight	15 Kg	28 Kg	30 Kg
Dimensions (WxHxD)	440x88(2U)x405 mm	440x88(2U)x650 mm	
ENVIRONMENTAL DATA			
Working Temperature	0 °C ÷ 40 °C		
Relative Humidity	0 % ÷ 90 % non condensante		
Acoustic Noise @ 1 m	< 50 dBA		
STANDARDS			
Standards	EN 62040-1-1, EN 62040-2, EN 62040-3		
GUARANTEE			
Guarantee	2 years, including batteries		

NIKY PLUS

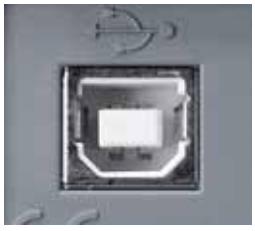
TOP PERFORMANCE ENTRY LEVEL UPS

Niky 600 Plus / 800 Plus

These UPS have three IEC output sockets, a LED indicating their operating status and a port for monitoring the operation of the UPS and executing the emergency shutdown of Windows and Linux operating systems with the softwareas standard.

Rear view.

Protection for telephone / fax / modem / LAN



USB port

Niky 1100 Plus / 1500 Plus

They are complete with electronic stabilisation (AVR), a LED for status indication and total protection, RJ/11RJ45 socket for telephone/ fax/ modem/LAN protection.
The serial port RS232 with DB9 connector and the USB port enables the monitoring of UPS operation and execution of emergency shutdown of Windows and Linux operating systems with the software as standard.
The Niky 1100E / 1500E are fitted with IEC output sockets located on the rear of the uninterruptible power supply.
The specifications of these UPS make them a perfect solution for industrial automation applications.

Rear view.

Protection for telephone / fax / modem / LAN

RS232 port- USB

Model	Nominal Power [VA]	Active power kW	Runtime @ 80% load	Net weight (Kg)	Item code
Niky 600 Plus	0,6	0,3	5	7	PCI0028
Niky 800 Plus	0,8	0,4	5	7,5	PCI0029
Niky 1100 Plus	1,1	0,6	5	13	PCI0030
Niky 1500 Plus	1,5	0,9	5	16	PCI0031

Accessories	Description	item code
600/800PLUS	Pack of 5 multiple output extension cord	PAI0012

	Niky 600 Plus	Niky 800 Plus	Niky 1100 Plus	Niky 1500 Plus
SPECIFICATIONS				
Nominal Power	600 VA	800 VA	1100 VA	1500 VA
Active Power	300 W	400 W	600 W	900 W
Technology	Line Interactive con AVR (VI)		Line Interactive con AVR (VI)	
INPUT				
Input Voltage	230 V		230 V	
Input Voltage Range	160 V÷290 V		175 V÷285 V	
Input Frequency	50 Hz / 60 Hz		50 Hz / 60 Hz	
OUTPUT				
Output Voltage	230 V		230 V	
Output Frequency	50 Hz / 60 Hz ± 1Hz		50 Hz / 60 Hz ± 1Hz	
Wave form	Pseudo-Sinewave		Pseudo-Sinewave	
BATTERIES				
Runtime @ 50% load	10'	10'	10'	10'
Runtime @ 80% load	5'	5'	5'	5'
GENERAL SPECIFICATIONS				
Signals and Alarms	Led and acoustic signals		Led and acoustic signals	
Communications Ports	USB port		RS232 ports	
Tel/Fax/Modem/LAN Protection	RJ 11 / RJ 45 connector		RJ 11 / RJ 45 connector	
UPS Communicator Software	download free of charge from the website (www.metasystemenergy.com)		download free of charge from the website (www.metasystemenergy.com)	
Protection	Electronic protection against overloads and short circuits. Operation blocked at the end of runtime or overheating Automatic shutdown for protections triggering		Electronic protection against overloads and short circuits. Operation blocked at the end of runtime or overheating Automatic shutdown for protections triggering	
Output Sockets	N.3 IEC 320		N.6 IEC 320	
MECHANICAL SPECIFICATIONS				
Net Weight	7 Kg	7,5 Kg	13 Kg	16 Kg
Dimensions (WxHxD)	95 x 171 x 354 mm		147 x 234 x 360 mm	
ENVIRONMENTAL DATA				
Working Temperature	0 °C ÷ 40 °C		0 °C ÷ 40 °C	
Relative Humidity	0 % ÷ 95 % non condensing		0 % ÷ 95 % non condensing	
Acoustic Noise @ 1 m	< 40 dBA		< 40 dBA	
STANDARDS				
Standards	EN 62040-1-1, EN 62040-2, EN 62040-3		EN 62040-1-1, EN 62040-2, EN 62040-3	
GUARANTEE				
Guarantee	2 years, including batteries		2 years, including batteries	

COMPATIBLE UPS ACCESSORIES

CODICE	MEGALINE RACK BATTERY CABINET	MEGALINE BATTERY CABINET	KB MEGALINE / 1 ESPANSIONE AUTONOMIA	KB MEGALINE / 2 ESPANSIONE AUTONOMIA	CB 36 CARICABATTERIE AGGIUNTIVO	PL MEGALINE	MEGALINE CAVO SPLITTER	BATTERY CABINET per WHAD 800, 1000, 1500XL	BATTERY CABINET per WHAD 2000, 2500	KIT WHAD 800, 1000, 1250, 2000, 2500 SPLITTER	UPS BATTERY 48V per WHAD RACK 800-1000	UPS BATTERY 72V per WHAD RACK 1500	WHAD RACK 800-1000-1500 SPLITTER	BATTERY BOX 36V 4U CONTIENE 12 BATTERIE 7,2ah	BATTERY BOX 72V 2U CONTIENE 12 BATTERIE 7,2ah	CARICABATTERIE AGGIUNTIVO PER UPS TRIMOD®	BYPASS MANUALE DI MANUTENZIONE BP / 1	BYPASS MANUALE DI MANUTENZIONE BP / 2
	PAR0002	PAR0003	PAM0018	PAM0020	PAM0043	PAM0048	PAM0031	PAO00280	PAO0009	PAO0015	PAR0014	PAR0015	PAR0001	PAO0025	PAO0026	PAM00840	PAM0023	PAM0024
TRIMOD®																Only for TRIMOD® 45 and TRIMOD® 60		
MegaLine Tower		x	x	x	x	x	x										x	x
MegaLine Rack	x		x	x	x												x	
WHAD Tower								Only for "EXT"	Only for "EXT"	Only for "EXT"			x				Only for WHAD 3000, 4000	
WHAD Rack											x	x	x					
DHEA																		
DAKER DK														x	x			
DAKER Niky																		
Harviot																		
Eco Interactive																		
Powerstrip																		

BY-PASS UPS per WHAD 5000 / 6000	BYPASS MANUALE DI MANUTENZIONE DAKER DK	PW 1250 ESPANSIONE DI POTENZA	KIT GUIDE RACK 1U / 19" PER WHAD RACK	KIT GUIDE RACK 2U / 19" PER WHAD RACK	KIT GUIDE RACK 6U / 19" PER MEGALINE RACK	KIT GUIDE RACK 19" PER DAKER DK	SOFTWARE UPS SUPERVISOR PER PORTA SERIALE	SOFTWARE UPS SUPERVISOR USB	KIT INTERFACCIA PER SHUTDOWN IBM AS / 400	DRY CONTACT CARD PER DAKER DK	CS121: ADATTATORE SNMP ESTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI	CS121B: ADATTATORE SNMP ESTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI	CS121 M: ADATTATORE SNMP ESTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI CON INTERFACCIA RS485 MODBUS	CS121 SK: ADATTATORE SNMP INTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI	CS121B SK: ADATTATORE SNMP INTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI	CS121M SK: ADATTATORE SNMP INTERNO PER LA CONNESSIONE DELL'UPS ALLA RETE DATI. CON INTERFACCIA RS485 MODBUS	INTERFACCIA RELE'	CONFEZIONE N° 5 MULTIPRESE
PAO0017	PAR0019	PAM0027	PAR0016	PAR0017	PAR0018	PAR0020	PAI0007	PAI0011	PAI0026	PAR0022	PAI0014	PAI0017	PAI00420	PAI0027	PAI0028	PAI00430	PAM0009	PAI0012
							X	X	X					X	X	X		
		X					X	X	X		X	X	X				X	
		X			X	X	X	X	X		X	X	X				X	
Only for WHAD 5000 e 6000							X	X	Only for WHAD 2000, 2500, 3000, 4000, 5000 e 6000		X	X	X	Only for WHAD 3000, 4000, 5000 e 6000	Only for WHAD 3000, 4000, 5000 e 6000	Only for WHAD 3000, 4000, 5000 e 6000	Only for WHAD 1500, 2000, 2500, 3000, 4000, 5000 e 6000	
			X	X		X	X	X			X	X	X					
							X	X										
	X					X	X	X		X				X	X	X		
							X	X										X
							X	X										X
							X	X										

ACCESSORIES
HARDWARE

TRIMOD — Power module

The TRIMOD® power upgrade module enables to increase power when added to the inverter cabinet. The module is available with either 2.7 kVA, 3.4 kVA or 5 kVA power ratings. Thanks to its exclusive modular architecture, the TRIMOD® is able to be upgraded either in power and runtime, in line with the actual needs of the load, by simply adding power modules or battery drawers, with great savings in the initial cost of investment.

TRIMOD — Battery drawer

The TRIMOD® battery drawer can be used to increase your UPS runtime, either directly inside the inverter cabinet, provided there is enough free space for the extra battery drawers, or in additional battery cabinets. By inserting drawers of batteries (in multiples of four), chosen from 7.2 Ah or 9 Ah version, you can create ad hoc runtime configurations, facilitating both UPS commissioning and subsequent maintenance requirements.

TRIMOD — Transformer

The TRIMOD® was engineered with a passing neutral system based on the very latest technology in electronics, eliminating the need for transformers and providing great benefits in terms of cost, weight and size. Meta System can supply a range of high-efficiency, compact isolation transformers, fitted inside an elegant coordinating cabinet with the UPS system for the few special cases demanding it.

MEGALINE — PW1250 - Power board

All the models (except for the MegaLine 5000 single cabinet and the MegaLine 10000 double cabinet) can be upgraded in power in order to satisfy the requirements of the user. Installation is very simple. Power upgrade: an extra board and an extra battery kit must be fitted. Redundancy upgrade: the board can be fitted without the corresponding kit of batteries.

MEGALINE — KB MegaLine/1, KB MegaLine/2 - Runtime extensions

All the MegaLine models can have an extended runtime by fitting kits of three 12V 9Ah batteries inside their battery cabinet (max. 4 in the single cabinet, max 10 inside the battery cabinet of double cabinet models) or in additional battery cabinets.

MEGALINE — Additional Battery cabinets

Additional battery cabinets (option) for runtime extension. They can be connected in parallel by using the special MegaLine splitter cables. It is possible to connect several cabinets with no limit thanks to the MegaLine low battery voltage level. The 36V battery kits allow to obtain several sets of battery strings in parallel, increasing the level of redundancy of the system.

MEGALINE

PL MegaLine

An 80 cm cable to connect the inverter and battery cabinet in a tower configuration.
The inverter must be put on top of the battery cabinet.

MEGALINE

MegaLine Splitter

Y-shaped cable to connect two MegaLine battery cabinets together. If configurations include more than two battery cabinets, a splitter cable must be fitted for each extra MegaLine battery cabinet (e.g. 1 inverter unit + 5 MegaLine battery cabinets = 4 splitters).

MEGALINE

BP/1, BP/2 - Manual maintenance bypass

The manual maintenance bypass makes it possible to remove the UPS from its original application without interrupting the power supply to the load.
Thanks to the manual bypass it's possible to execute any service and maintenance that require the UPS to be switched off: maintenance, upgrades, and expansions of power or runtime. It replaces the rear connector and can be easily disconnected from the UPS.
Available in two versions for the single (BP/1) or double cabinet (BP/2).

MEGALINE

CB36 - Additional battery charger

An extra CB36, 7A battery charger can be fitted inside the battery cabinets. This reduces the overall recharge time and it is particularly useful when a large number of extra battery kits is required.

MEGALINE

Relay Interface Kit

The interface is used to signal the operating status by dry contact ports. The interface is suitable with all UPS equipped with logic level port. The interface indicates mains operation, battery operation, low batteries (runtime reserve) and anomaly (overload or internal anomaly). Maximum capacity of the relay contacts: 1A (150Vdc or 125Vac).

DHEA

Battery Pack

The runtime of DHEA can be easily and quickly increased adding extra battery packs on top. Each battery pack stores six 12V 7.2Ah batteries. Connecting up to the electronic unit is simple and safe, so that even the less expert among us can pick up and fit each element in the system with extreme ease. The inverter's 72V rated power voltage is only present when the module has been connected up: during transport, there is only 36V across the battery pack terminals for maximum safety and in compliance with safety standards.

ACCESSORIES
GUIDE TO UPS MANAGEMENT

On its own, a UPS is unable to guarantee total protection of the data processing systems it powers. This is due to several factors, amongst which:

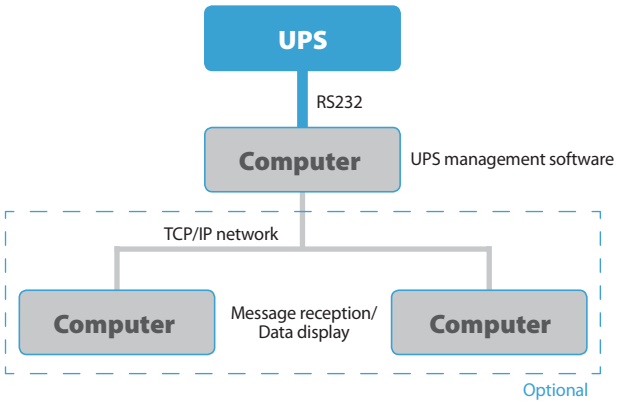
- Batteries do not have unlimited autonomy
- Unexpected load connections, such as stoves and vacuum cleaners, can cause overloads which annul the protection provided by the UPS.
- Installation in unmanned areas such as EDP rooms and basements or round-the-clock operations can make alarm reception difficult or impossible. This consequently put critical equipment at risk.

Moreover, since the systems can be extremely costly to repair, also owing to the time relevant downtime, it is easy to understand the importance to equip a UPS with a supervisory system able to inform the user of the imminent danger and automatically proceed with a series of actions to protect the data and the operating systems.

Meta System offers various supervision systems able to meet the customers' different requirements.

Local Protection

To protect a single computer (server or workstation) and its relative peripherals, it is enough to use an RS232 connection or USB and install the operating software in the system that must be protected.
If the computer is linked to an IP network, it is possible to receive alarm signals from the UPS as pop-up and e-mail messages, while the operating data can be graphically displayed via specific monitoring programs.

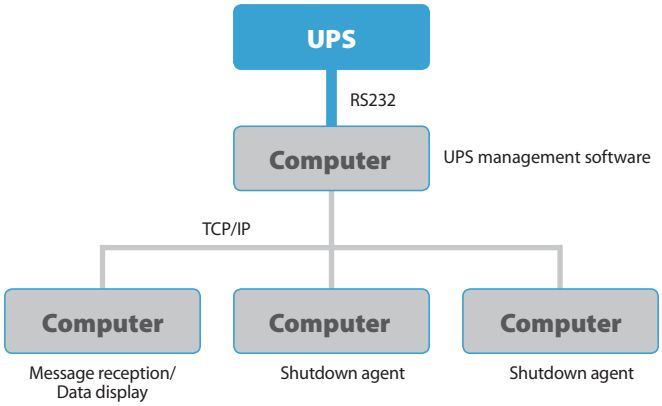


The advantage of this type of management is the low cost of the implementation, but the UPS must be positioned near the system to be protected.

The following applications are available:
- UPS Communicator
- UPS Supervisor

Extension of the Local Protection

In case of several computers to manage, the previously described solution can be used with a special software "agent" installed in the other computers. This special software will then receive and execute the commands transmitted by the computer interfaced with the UPS.



Here again, the implementation costs are very low, but the management system is completely inhibited when the computer interfaced with the UPS is shutdown (fault, maintenance, upgrading, etc…). If this happens, it will no longer be able to receive the alarm signals and will endanger the remaining computers.

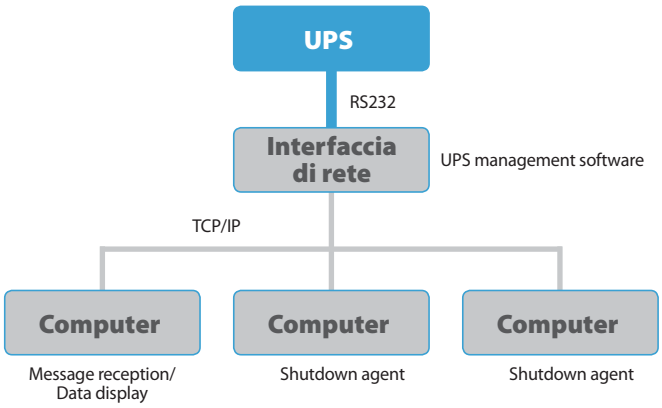
The following applications are available:
- UPS Communicator
- UPS Supervisor + RCCMD agent

Integration with the IP network

For this type of installation, the UPS must be connected to a special network interface in which the management software is installed. The network board is then connected to the IP network.

Since the UPS is directly linked to the UPS network, its management system can send e-mail and pop-up messages, shutdown and power the computer again.

Protection for the various computer s is guaranteed by equipping them with a software agent that receives commands from the network interface of the UPS.



There are lots of advantages with this solution:

- The UPS can even be installed at a distance from the systems it must protect
- the entire management no longer depends on one single computer, effectively guaranteeing that all the devices connected are protected.
- The data can be displayed via any WEB browser without dedicated software having to be installed.

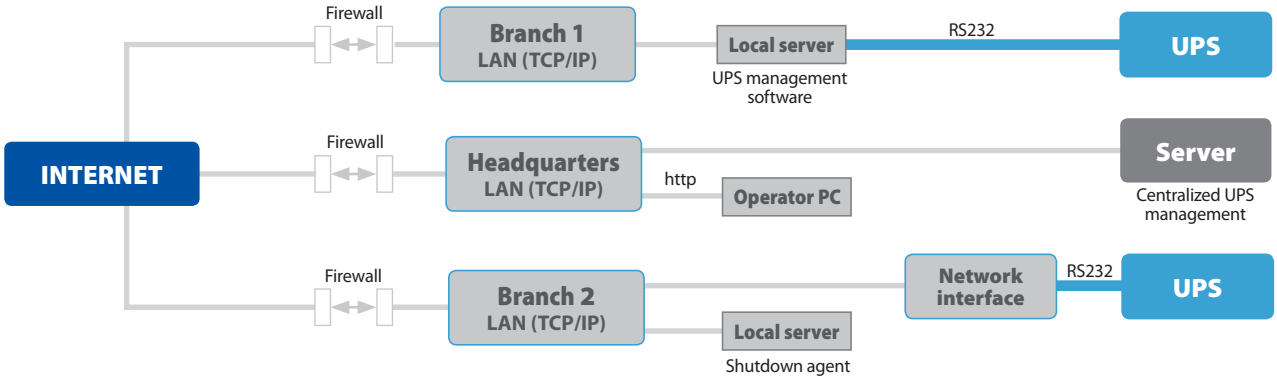
The following products are available for this type of installation:

- CS121 network interface + RCCMD software agent
- CS121B network interface + RCCMD software agent
- CS121 SK network interface + RCCMD software agent
- CS121B SK network interface + RCCMD software agent

Management of several UPS

It requires a software application that continuously monitors an even high number of UPS installed either locally or in remote sites.

All the alarms generated by the UPS through their respective management systems are received, via the IP network, by this application, which memorizes them in a database and transmits a series of e-mail and pop-up messages to the operators who, by means of the WEB browser, are quickly able to identify the UPS that generated the alarm and to make a complete and efficient diagnosis.



A Bank is a typical example of how this application can be used:

- Each branch has a UPS monitored by one of the previously described management systems, which controls and protects the local network
- The various different local networks are linked to each other permanently
- The monitoring station that continuously controls all the UPS is installed in the headquarters

The advantage of this solution is the standard monitoring system which allows to manage UPS without having to know their IP address.

The software available for this type of application is called UNMS. Each UPS must be interfaced with UPS Supervisor, or with CS121 network interfaces or with a system that supports the SNMP protocol.

ACCESSORIES

Environmental monitoring

There are applications which require UPS monitoring and environmental monitoring too.

With CS121 / CS121 SK it is possible to monitor temperature and humidity using special sensors. Within environmental monitoring is also possible set treshold values and program relevant job to execute as sending e-mail, pop-up message, remote computer command, shutdowns, ecc.

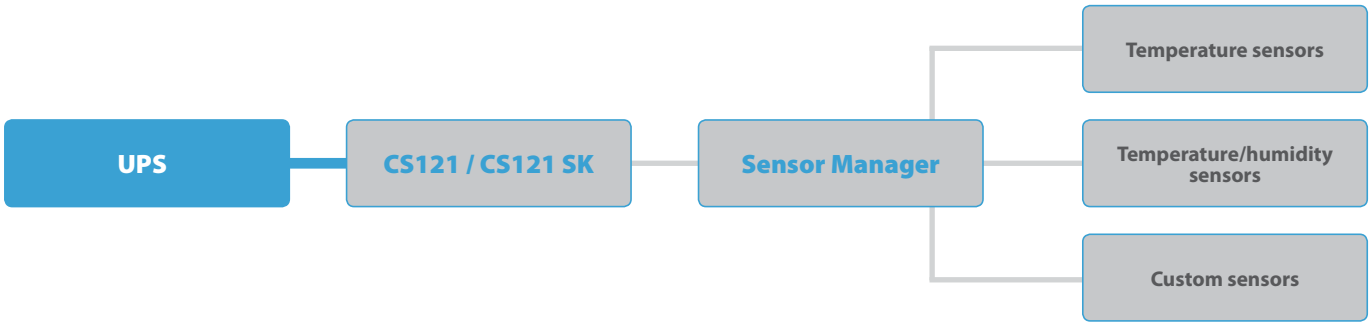
If more than one sensor is required, a special device allowing connection up to 8 units can be installed between the CS121 interface and the sensors themselves.

The historic data of the trend of the entities measured by the sensors are memorized in a dedicated log file and can be displayed in graphic form or exported for successive analysis and filing.

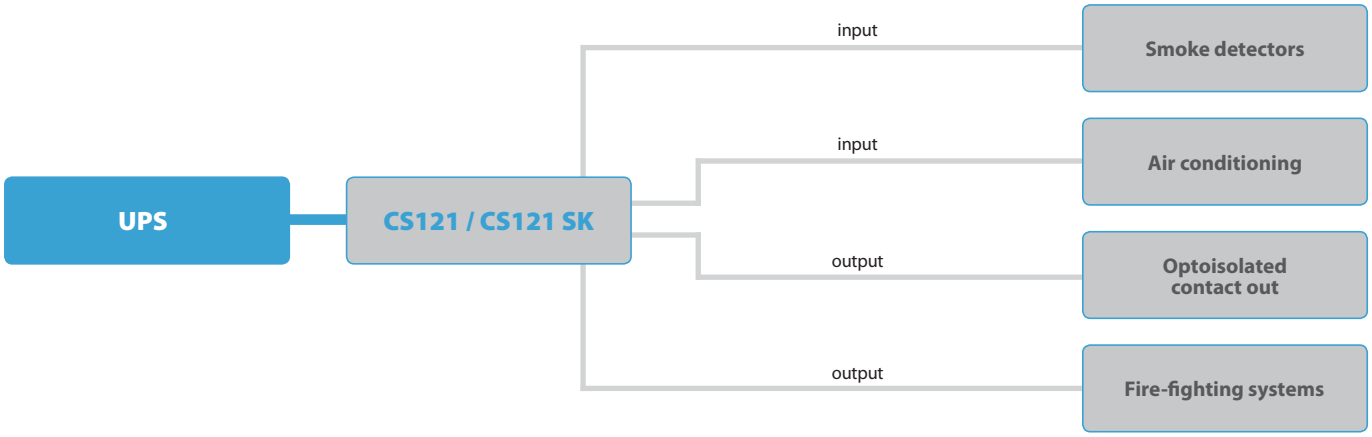
The system controls also the status of digital inputs (e.g. microswitches that open doors or fault indicator contacts of conditioning systems) and hardware devices like indicator lights or sirens can be programmed: here again, e-mail messages can be transmitted or commands executed on remote computers.

Monitoring of one single sensor

Monitoring of several sensors



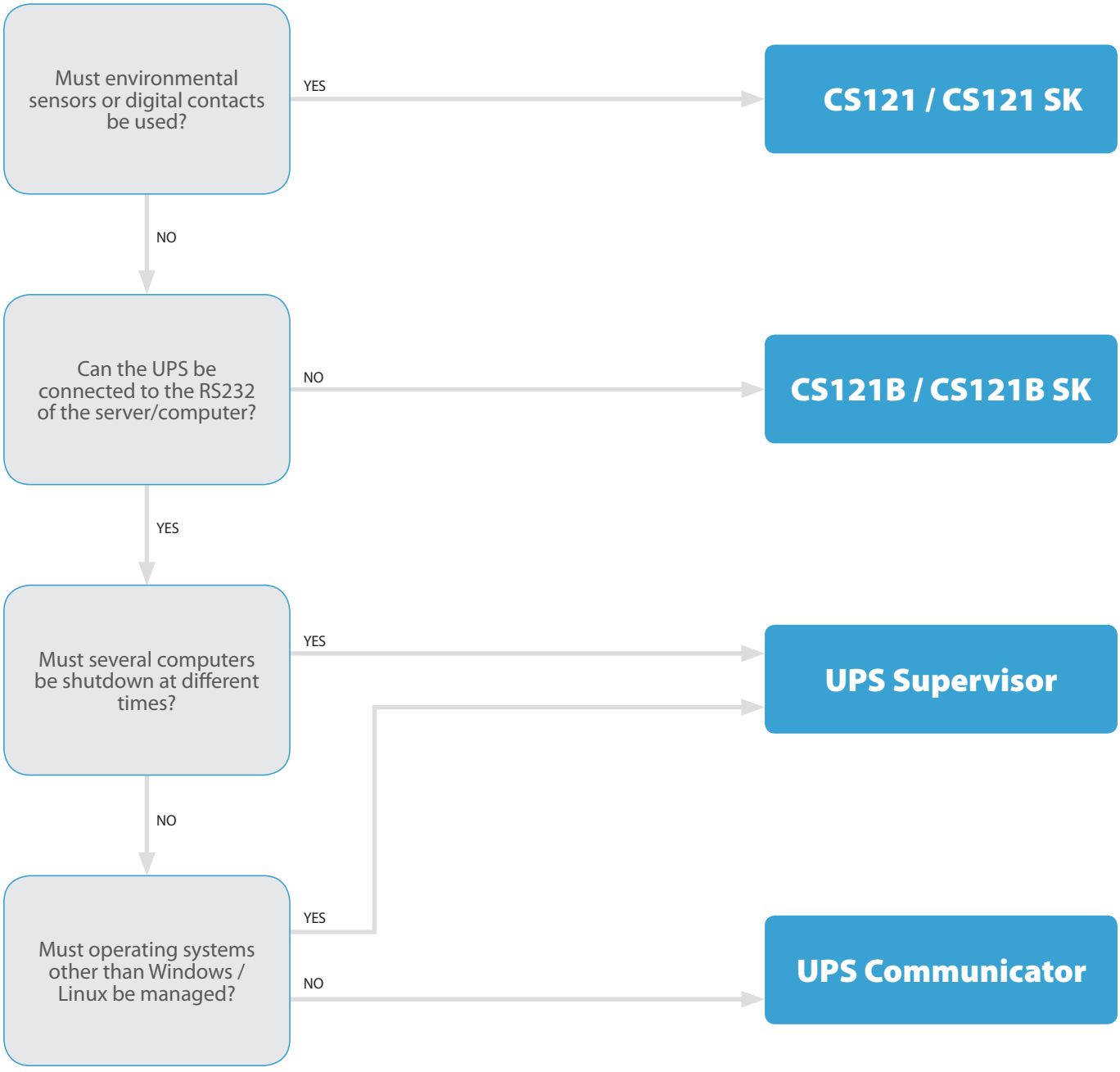
Monitoraggio ingerssi digitali e comando dispositivi hardware



The following products are available for this type of system:
- CS121 / CS121 SK : network interface
- SM_T_COM : temperature sensor for CS121 / CS121 SK
- SM_T_H_COM : temperature and humidity sensor for CS121 / CS121 SK
- SensorManager : manager of sensors for CS121 / CS121 SK
- SM_T : temperature sensor for SensorManager
- SM_T_H : temperature and humidity sensor for SensorManager

How to choose the right product

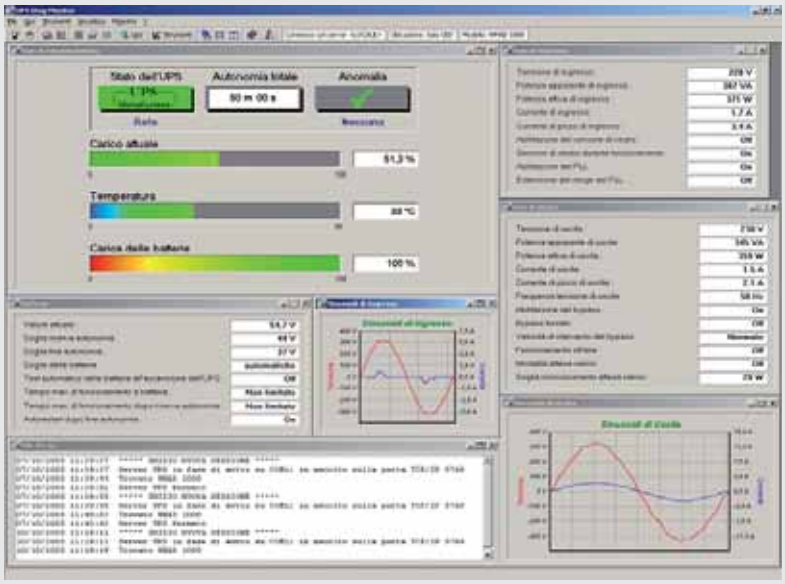
The concepts outlined on the previous pages could give rise to doubts as to which is the best system to use and in which circumstances. To establish the best solution for every sort of requirement it is enough to answer few simple questions. The diagram below tells you how:



ACCESSORIES
CONTROL AND COMMUNICATION

UPS Communicator

This is Meta System's free solution. It comprises a group of applications that continually monitor UPS operation and protect the operating systems of the computers powered by the UPS itself. The client/server structure makes it extremely flexible, efficient, simple to use and "light" when it comes to the system resources required.



UPS Communicator includes the following main modules:

- **UPS Server:**
  server module for UPS management through the RS232 link.
  This server module can control numerous events (power failure, overload, bypass, internal faults, etc..) and is able to carry out lots of actions for each one (registration in the log file, transmission of pop-up messages, e-mail transmission, program execution, local and remote shutdowns, etc...).

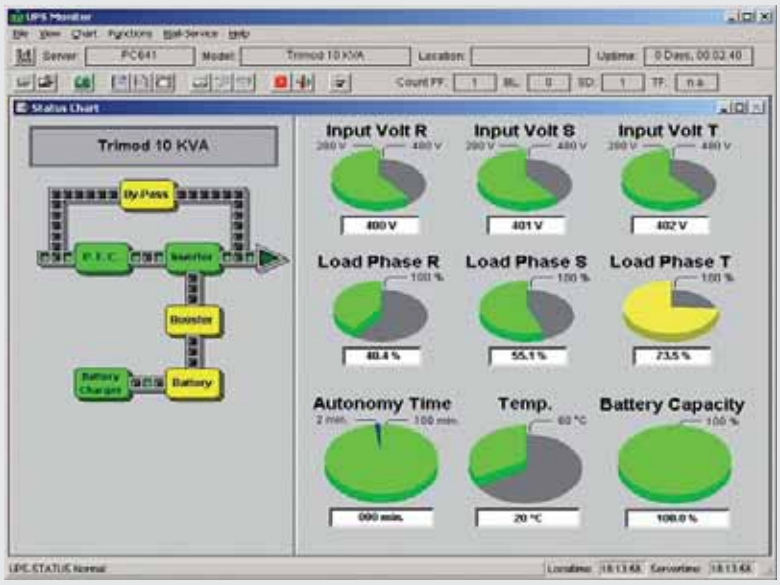
- **UPS Diag Monitor:**
  graphic interface which, after connection to the UPS Server module, allows to access the operating data of the UPS, make a complete diagnosis, program special functions and execute tests.

- **RS System:**
  agent for executing commands on remote computers (shutdown, customized commands, pop-up messages) via the TCP/IP protocol.

Other features:
- Supports all Windows operating systems (98 and more recent)
- Supports all Linux distributions
- Can be downloaded free of charge from Meta System web page (free online registration is required)

UPS Supervisor

Solution that's similar to UPS Communicator but supplied on CD-Rom. It comprises the following main modules:



UPSMAN:

server module for UPS management through the RS232 link. This module can control numerous events (power failure, overload, bypass, internal faults, etc..) and is able to carry out lots of actions for each one (registration in the log file, transmission of pop-up messages, e-mail transmission, program execution, local and remote shutdowns, etc...), also at different times.

UPSMON:

graphic interface which, after connection to the UPSMAN module, allows you to access the main operating data of the UPS and conduct tests.

Other features:
• It supports all UPS models.
• It supports all the main operating systems, even in different architecture (Intel, Alpha, Itanium, etc…): Windows 98 and more recent, Linux, Unix, Novell Netware and Mac OS X 10.x. Consult the Internet web site for the complete list.
• Free upgrades can be downloaded from the Internet.
• Includes one RCCMD license

Product code	Description
PAI0007	"RS232" version of the UPS Supervisor
PAI0011	UPS Supervisor version "USB" (includes RS232 adapter)

ACCESSORIES
CONTROL AND COMMUNICATION

RCCMD

This software enables a computer to receive and execute, via the TCP/IP protocol, the following remote commands transmitted by the UPS management systems:
• Shutdown of the operating system
• Display of pop-up messages
• Execution of customized programs (.COM, .EXE, .BAT, .CMD) with the relative options

All the commands received are recorded in a log file.
Execution of these commands depends on an authorization control: the commands are only accepted if the UPS that transmitted them is part of an authorization list.
A "redundancy" list can be created, i.e. a command will only be executed if it has been transmitted by several UPS (e.g. to shutdown computers with redundant powering on two or more UPS).
The software supports 99% of the operating systems currently available on the market (including the AS/400 systems and virtualization systems like VMware) and is also available for different types of architecture (e.g. Intel, PowerPC, Alpha processors).
Compatible with: UPS Supervisor, CS121 (all models), SiteSwitch 4 (only the SS4 model).

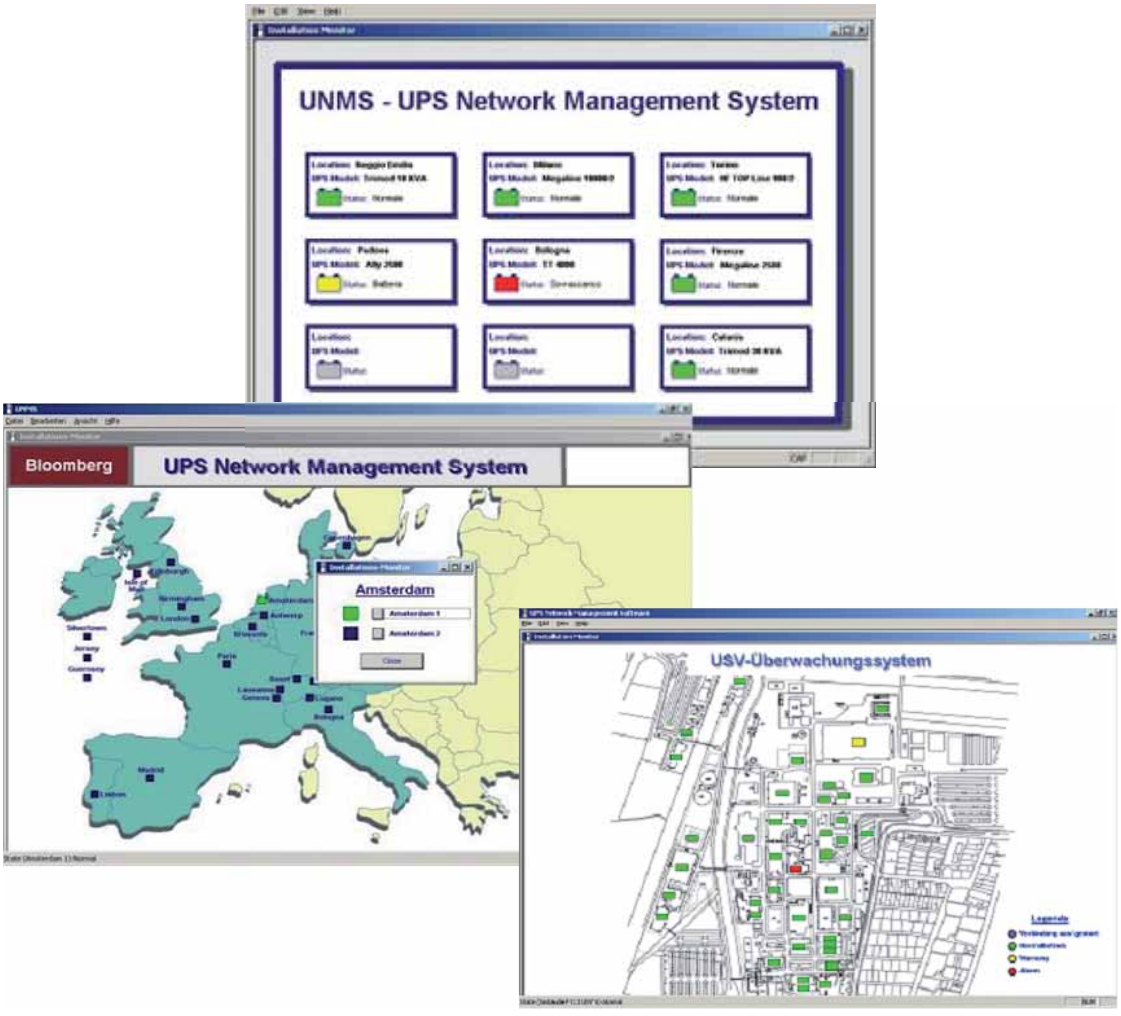
Notes
• An RCCMD license is required for each computer that needs to be controlled.
• Only the licenses are supplied: the software can be downloaded from the Internet.

Item code	Description
PAI0013	RCCMD multi OS license
PAI0035	Package of 5 RCCMD multi OS licenses
PAI0036	Package of 10 RCCMD multi OS licenses
PAI0037	Package of 25 RCCMD multi OS licenses
PAI0038	Package of 50 RCCMD multi OS licenses
PAI0016	RCCMD license for AS/400 (minimum release: V5R3M0)

UNMS

UNMS (UPS Network Management System) is a WEB based application that can continuously monitor the status of all the UPS installed in one or more locations by means of the UPS management systems (CS121, UPS Supervisor , SNMP) and the TCP/IP protocol.
All the alarm signals generated by the various different UPS are received by the monitoring station so as to achieve an immediate and thorough diagnosis of the problem and allow the technical assistance service to act urgently if needed.
The operating status of each UPS is represented by a traffic light icon: in case of anomaly, the icon of the UPS in the alarm status changes colour depending on the seriousness of the fault. The control program sends pop-up messages, e-mail and runs customized programs. The monitoring function of the UPS concerned can be accessed with an Internet browser and a simple click on the mouse.
The SNMP protocol's support allows this application to be used with different brands of UPS, so long as they are compatible with the MIB RFC 1628 specifications.
The system also allows the graphic interface to be customized, memorizing of all alarms received in a database for research purposes and can display graphs showing the trend of the main operating parameters of the UPS.
The basic version is free of charge. It allows to manage at the same time up to nine UPS in basic version the SNMP protocol is disabled.
UNMS is available for Windows XP Pro and Windows Server 2003.

Item code	Description
PAS00010	Licenses UNMS for 25 UPS
PAS00020	Licenses UNMS for 50 UPS
PAS00030	Licenses UNMS for 150 UPS
PAS00040	Licenses UNMS for 250 UPS
PAS00050	Licenses UNMS for 500 UPS
PAS00060	Licenses UNMS for 1000 UPS



ACCESSORIES
CONTROL AND COMMUNICATION

Network interfaces

They are special network devices designed to manage UPS autonomously. External software is not required: a 32-bit processor resides in the board along with an operating system of the "UNIX Embedded" type able to continuously monitor the operation of the UPS, handle lots of events (power failure, overload, bypass, faults,…) and consequently accomplish a series of actions, such as:

- Memorizing log files complete with the date and time
- Memorizing the trend of the main operating data complete with the date and time
- E-mail transmission
- Accomplishment of scheduled actions
- Displaying pop-up messages, making shutdowns and executing customized commands on remote computers *
- Turning the UPS off and on
- Transmitting Wake On Lan signals of the "Magic Packet" type
- Supporting the SNMP protocol and that of the main types of operating software (HP OpenView, IBM Tivoli, etc…)
- Transmission of SNMP trap messages
- Data and configuration display via the Internet browser (Internet Explorer, Mozilla Firefox, Opera, etc…) or Telnet
- The firmware can be upgraded using a dedicated software package that can be downloaded from the Internet free of charge
- 10/100Mbit Base-T Ethernet link (half-duplex and full-duplex) with self-recognition function
- Includes one RCCMD license

* The RCCMD software agent must be installed in these computers

CS121B

Power supply voltage :	9 to 30 V DC (power supplier included)
Temperature range :	0° C to 40° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H] :	70 x 126 x 30 mm
Type of installation :	external
UPS supported :	all, expect for TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK, DAKER Niky 600/800
Product code :	PAI0017

CS121B SK

Power supply voltage :	9 to 30 V DC
Temperature range :	0° C to 60° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H] :	60 x 120 x 30 mm
Type of installation :	internal (slot)
UPS supported :	TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK
Product code :	PAI0028

UPS

RS232

CS121B
or
CS121B SK

- HTTP / java / UPSMON
- Execution of remote programs
- SNMP, SNMP Trap management
- E-mail transmission (SMTP)
- Telnet, FTP, setup / update
- Log File, Historical Data File

SHUTDOWN / COMMANDS / MESSAGES

- Unix / Linux + agent RCCMD
- Windows + agent RCCMD
- MAC OS X + agent RCCMD
- AS/400 + agent RCCMD
- Nowell Netware+ agent RCCMD
- VMware + agent RCCMD

ACCESSORIES
CONTROL AND COMMUNICATION

CS121 and CS121 SK

They are the "professional" version of our network interfaces. Besides including all the functions described for the "CS121B / CS121B SK" versions, they also feature the following additional functions:
- 1 multifunction RS232 port (interfacing with environmental sensors, MODBUS protocol, pipe-through function, setup via terminal)
- 4 digital contacts that can be independently programmed as inputs or outputs and used for integrating with alarm systems, for example
- MODBUS over IP protocol

CS121

Power supply voltage :	9 to 30 V DC (power supplier included)
Temperature range :	0° C to 40° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H] :	70 x 126 x 30 mm
Type of installation :	external
UPS supported :	all, expect for TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK, DAKER Niky 600/800
Product code :	PAI0014

CS121 SK

Power supply voltage :	9 to 30 V DC
Temperature range :	0° C to 60° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H]:	60 x 120 x 30 mm
Type of installation :	internal (slot)
UPS supported :	TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK
Product code :	PAI0027

UPS

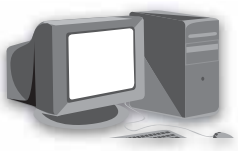
RS232

CS121
or
CS121 SK

- Fire-fighting systems
- Air conditioning
- Smoke detectors
- IN relays
- OUT relays

- Configuration via Terminal
- RS232 Pipe-Through
- MODBUS over RS232
- Temperature sensors
- Sensor Manager

- MODBUS over IP
- HTTP / java / UPSMON
- Execution of remote programs
- SNMP, SNMP Trap management
- E-mail transmission (SMTP)
- Telnet, FTP, setup / update
- Log File, Historical Data File



SHUTDOWN / COMMANDS / MESSAGES

- Unix / Linux + agent RCCMD
- Windows + agent RCCMD
- MAC OS X + agent RCCMD
- AS/400 + agent RCCMD
- Nowell Netware + agent RCCMD
- VMware + agent RCCMD

ACCESSORIES
CONTROL AND COMMUNICATION

CS121M e CS121M SK

They are the "professional" version of our network interfaces. Besides including all the functions described for the "CS121B / CS121B SK" versions, they also feature the following additional functions:
• 1 multifunction RS232 port
• 4 digital contacts that can be independently programmed as inputs or outputs and used for integrating with alarm systems, for example

NOTE: The RS485 port is used only with the MODBUS.

CS121M

Power supply voltage :	9 to 30 V DC (power supplier included)
Temperature range :	0° C to 40° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H] :	70 x 126 x 30 mm
Type of installation :	external
UPS supported :	all, expect for TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK, DAKER Niky 600/800
Product code :	PAI00420

CS121M SK

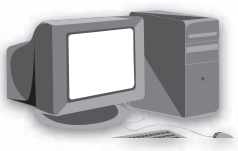
Power supply voltage :	9 to 30 V DC
Temperature range :	0° C to 60° C
Humidity range :	10 to 80 % non-condensing
Dimensions [L x D x H]:	60 x 120 x 30 mm
Type of installation :	internal (slot)
UPS supported :	TRIMOD, ARCHIMOD, WHAD 3000/6000, DAKER DK
Product code :	PAI00430

UPS

RS232

CS121M
or
CS121M SK

- Fire-fighting systems
- Air conditioning
- Smoke detectors
- IN relays
- OUT relays
- MODBUS for RS485
- MODBUS over IP
- HTTP / java / UPSMON
- Execution of remote programs
- SNMP, SNMP Trap management
- E-mail transmission (SMTP)
- Telnet, FTP, setup / update
- Log File, Historical Data File



SHUTDOWN / COMMANDS / MESSAGES

- Unix / Linux + agent RCCMD
- Windows + agent RCCMD
- MAC OS X + agent RCCMD
- AS/400 + agent RCCMD
- Nowell Netware + agent RCCMD
- VMware + agent RCCMD

ACCESSORIES
CONTROL AND COMMUNICATION

SM_T_COM sensor

Temperature sensor for direct connection to the COM2 of the CS121, CS121 SK and SiteSwitch 4 (only the SS4 model) interfaces.
Cannot be used with SensorManager.

Temperature range :	-25 to +100°C (± 0.5%)
Power supply voltage :	9 to 15 V DC (straight from CS121)
Dimensions [L x D x H] :	70 x 70 x 27 mm
Length of connecting cable :	approx. 1.8 m (included)
Product code :	PAI0018

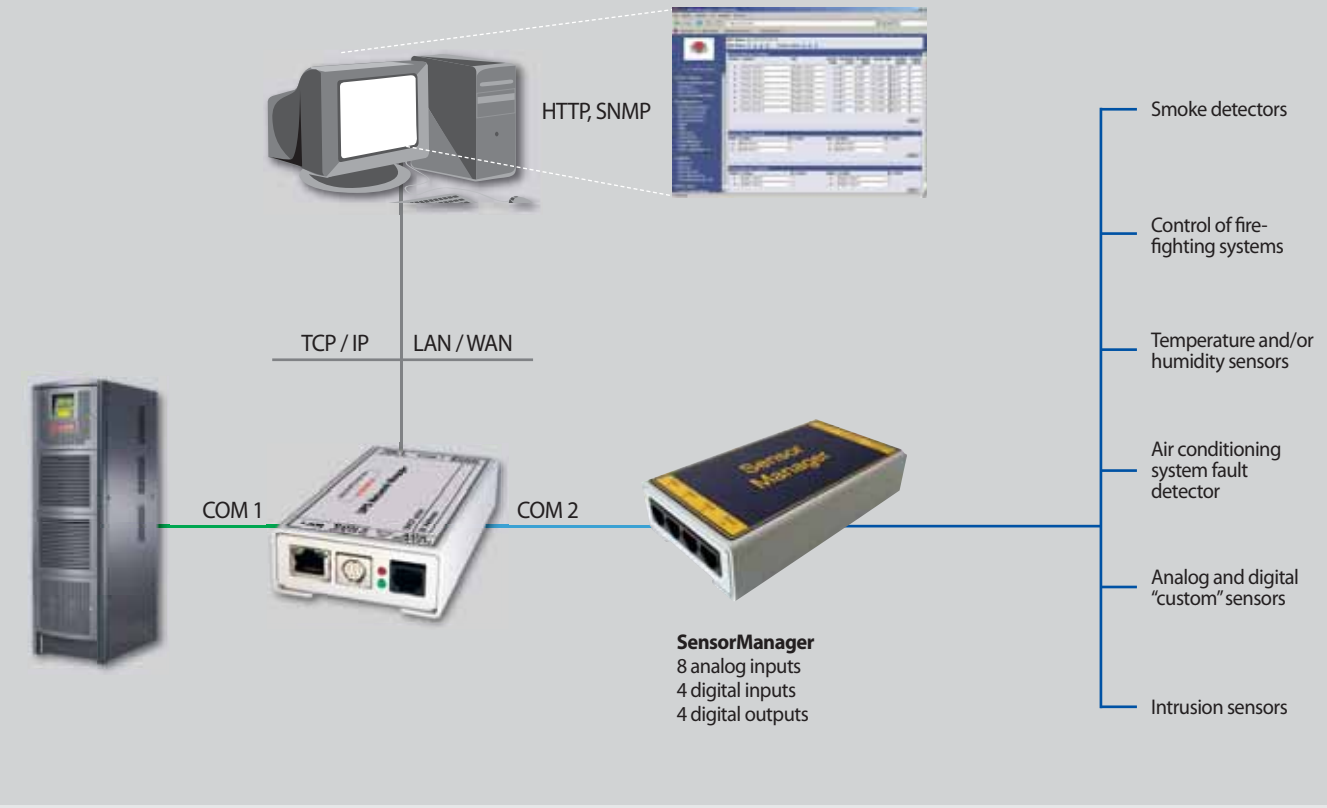
SM_T_H_COM sensor

Combined temperature and humidity sensor for direct connection to the COM2 of the CS121, CS121 SK and SiteSwitch 4 (only the SS4 model) interfaces.
Cannot be used with SensorManager.

Temperature range :	-25 to +100°C (± 0.5%)
(Relative) humidity range :	0 to 100 % (± 0.5%)
Power supply voltage :	9 to 15 V DC (straight from CS121)
Dimensions [L x D x H] :	70 x 70 x 27 mm
Length of connecting cable :	approx. 1.8 m (included)
Product code :	PAI0032

Sensor Manager

Manager for environmental sensors: connects to the COM2 of CS121, CS121 SK and SiteSwitch 4 (only the SS4 model) interfaces and controls up to 8 analog inputs, 4 digital inputs and 4 digital outputs. Configuration and management are created from the previously described interfaces.
The "Scale Driver" and "Offset" configuration functions allow SensorManager to be used with any analog apparatus (see specifications).
Includes 1 "SM_T" temperature sensor.



Power supply voltage :	9 to 24 V DC
Temperature :	0° C to 40° C
Humidity :	10 to 80 % non-condensing
Analog inputs :	0 to 10 V
Digital inputs :	9 to 24 V
Digital outputs :	9 to 24 V (100mA)
Dimensions [L x D x H]:	70 x 126 x 30 mm
Product code :	PAI0019

ACCESSORIES
CONTROL AND COMMUNICATION

SM_T sensor

Temperature sensor **for exclusive use with SensorManager.**
Can be connected to another "SM_T" sensor using a dedicated connector.

Temperature range :	0 to 100 °C (± 1%)
Power supply voltage :	9 to 24 V DC (straight from SensorManager)
Dimensions [L x D x H] :	70 x 70 x 27 mm
Length of connecting cable :	approx. 5 m (included)
Product code :	PAI0021

SM_T_H sensor

Combined temperature and humidity sensor **for exclusive use with SensorManager.**

Temperature range :	0 to 100 °C (± 1%)
(Relative) humidity range :	0 to 100 % (± 5%)
Power supply voltage :	9 to 24 V DC (straight from SensorManager)
Dimensions [L x D x H] :	70 x 70 x 27 mm
Length of connecting cable :	approx. 5 m (included)
Product code :	PAI0020

SM_FLASH

Flashing light signal. The events and times at which this signal must go on/off can be specified thanks to connection to SensorManager, interfaced with the CS121, CS121 SK and SiteSwitch 4 (only the SS4 model) devices.
Only compatible with SensorManager.

Power supply voltage :	12 to 15 V DC
Power input :	170 mA
Dimensions [L x D] :	70 x 40 mm
Connecting cable :	RJ12 - approx. 5 m (included)
Product code :	PAI0039

Door opening sensor

It consists of a reed contact held by a bulb, and a magnet. Connection to the AUX port of the CS121, CS121 SK and SensorManager devices allows you to use all the functions provided by these devices.
Compatible with CS121, CS121 SK and SensorManager.

Sensor dimensions [L x D x H] :	29 x 19 x 6 mm
Magnet dimensions [L x D x H] :	29 x 19 x 6 mm
Connecting cable :	approx. 1.8 m
Product code :	PAI0040

SiteSwitch 4

This device is used to manage energy distribution, i.e. it allows to power and shutdown the devices connected to its four independent powering outputs.
For example, during a power failure, a UPS can transmit a command that shuts down the least important loads (such as laser printers) so as to provide the critical systems with as much autonomy as possible.
Once the mains power returns, a command that powers these loads again can be transmitted by the same UPS.
The 5 leds on the front part allow you to check the main power status and that of each output.
Brackets allowing the device to be installed in 19" rack cabinets are included.
SiteSwitch 4 is available in two different versions: SS4 and SS4 AUX.

SS4

This is the high-performance version since it houses a network interface able to receive the commands from the CS121 interface /all models) that controls the UPS via TCP/IP.
This means that SS4 can be installed near the powered loads and allows a UPS to manage a potentially infinite number of them.
A CS121 SK network interface in the SS4 guarantees autonomous operation, i.e. without receiving commands from a UPS: commands can be transmitted to the computers (via RCCMD software), powering and shutdowns can be programmed, e-mail transmitted and environmental sensors controlled through its WEB interface.
It is compatible with the SNMP protocol.

Power supply voltage :	230 V / 16 A
Output sockets :	4 x (230 V / 8 A)
Output socket control :	internal / CS121 (all models)
Type of management connection :	Ethernet 10/100 Mbit/s
Dimensions [L x D x H] :	260 x 180 x 60 mm
Product code :	PAI0033

SS4 AUX

This is the cost effective solution. It is controlled by the CS121 and CS121 SK interfaces installed in the UPS via their contact ports and a connecting cable. It is the ideal solution if it must be installed near the UPS (e.g. inside the same rack cabinet), however, no more than 15 meters away.

Power supply voltage: :	230 V / 16 A
Output sockets :	4 x (230 V / 8 A)
Output socket control :	CS121 / CS121 SK
Type of management connection :	RJ11 cable - approx. 5 m (included)
Dimensions [L x D x H] :	260 x 180 x 60 mm
Product code :	PAI0034

Customer Care and Guarantee

Customer Care is handled directly by our dealers. Our distribution network can assist you with any sales or technical support you need, before or after purchase, relating to:

- offers, configurations and quotations
- pre-sales support to identify needs and choice the best solution
- after-sales technical support for any product enquiries
- technical and sales documentation

Furthermore, all Metasystem Energy UPS have 24-month warranty against manufacturing defects included in the price.

All MetaSystem products are designed, engineered and manufactured with total quality processes that guarantee the highest lifetime and reliability.

Moreover, in the rare event of a failure, they have also been designed in order to minimize the time to repair.

All MetaSystem's modular products are easily repaired by swapping power modules or boards,

whereas non modular products minimize the number of boards to repair and are easily accessible. The result is that most problems can be solved just on the first service call or simply by exchanging the failed module.

AD-EXMS/UPS11C/GB Edition 04/2011

MetaSystem
ENERGY
A Group Brand | legrand

MetaSystem Energy S.R.L.
Via Rodano, 1 - 42124 Reggio Emilia - ITALY
Tel. +39 0522 207000 - Fax +39 0522 207005
E-mail: info@metasystemenergy.com
web: www.metasystemenergy.com