

# MODULAR ONLINE VFI



## MEGALINE

### Modular and Redundant Single phase UPS

Dedication and great investment in Research and Development have made MetaSystem a leader in the production of high performance UPS.

The world's first ever range of modular and redundant, on line double conversion UPS was unveiled for the first time at the 1993 CEBIT, when MetaSystem presented its HF series.

The design philosophy of this truly unique range of products was to combine the performance of on line double conversion technology with modular and redundant architecture (both in terms of power and runtime).

These specifications offer high levels of reliability. In fact, by installing N+1 power modules inside the UPS for a

load that can be protected by N modules, the UPS will continue running even if a fault should develop on one of the modules.

The concept and engineering of this UPS range is so innovative they are still the only UPS offering these features today and are considered the benchmark product by many decision makers.

Nowadays, businesses want high-performance tools that are fast and simple to use but are most of all scalable, reliable and always in service.

Scalable so they can soften the effects of the rapid changes in technology and demand.

Reliable because these tools have the job of

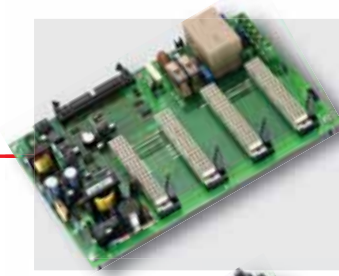
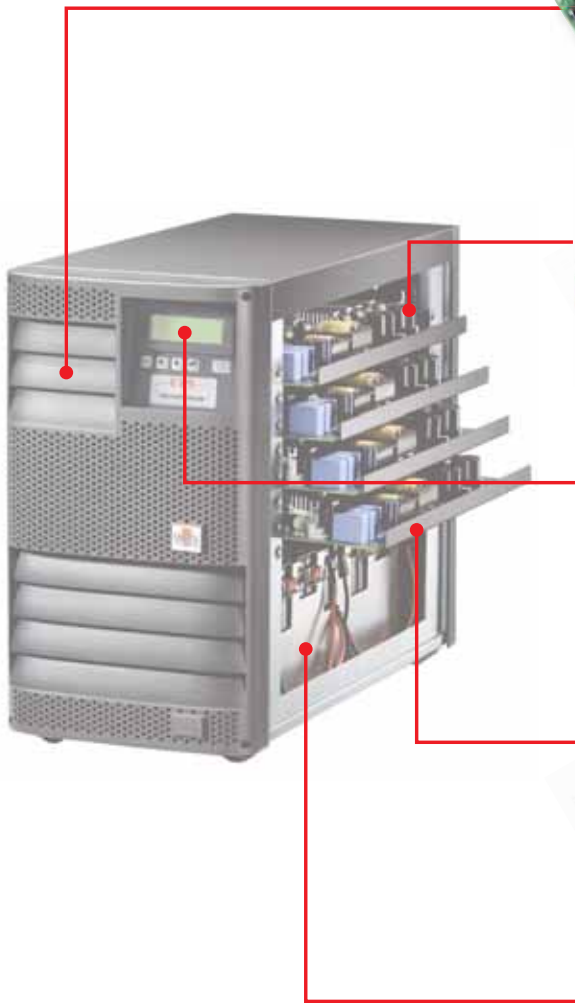


keeping a business up and running.

Always in service because nowadays, a quick response is part of the game.

Only modular and redundant UPS with on line double conversion technology can guarantee this level of product performance. This range of UPS has always been considered the showpiece product of MetaSystem's Power Division and has gradually grown and been enhanced as time has gone by, both in appearance and performance, reaching new heights with the production of the MegaLine series.





### MODULAR

Modularity and total resource distribution mean the MegaLine UPS give you superior uptime..



### ON LINE DOUBLE CONVERSION

Sophisticated control logic gives you the confidence that the MegaLine performance is at the top of their category.



### PROGRAMMABLE

The LCD display makes all diagnostics data and programming menus accessible without the need for a PC connection.



### REDUNDANT & SCALABLE

Both power and runtime. Boards and batteries can be easily added or removed, reducing the average time for repair.

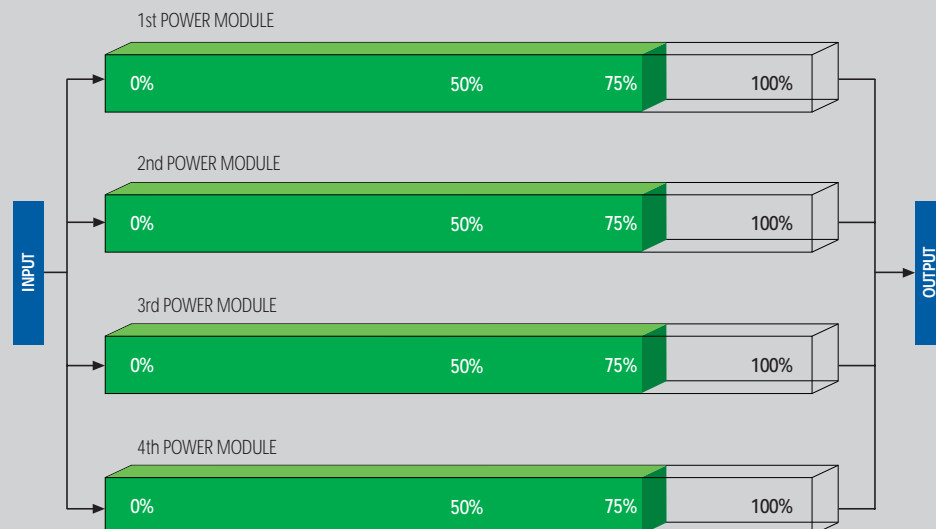


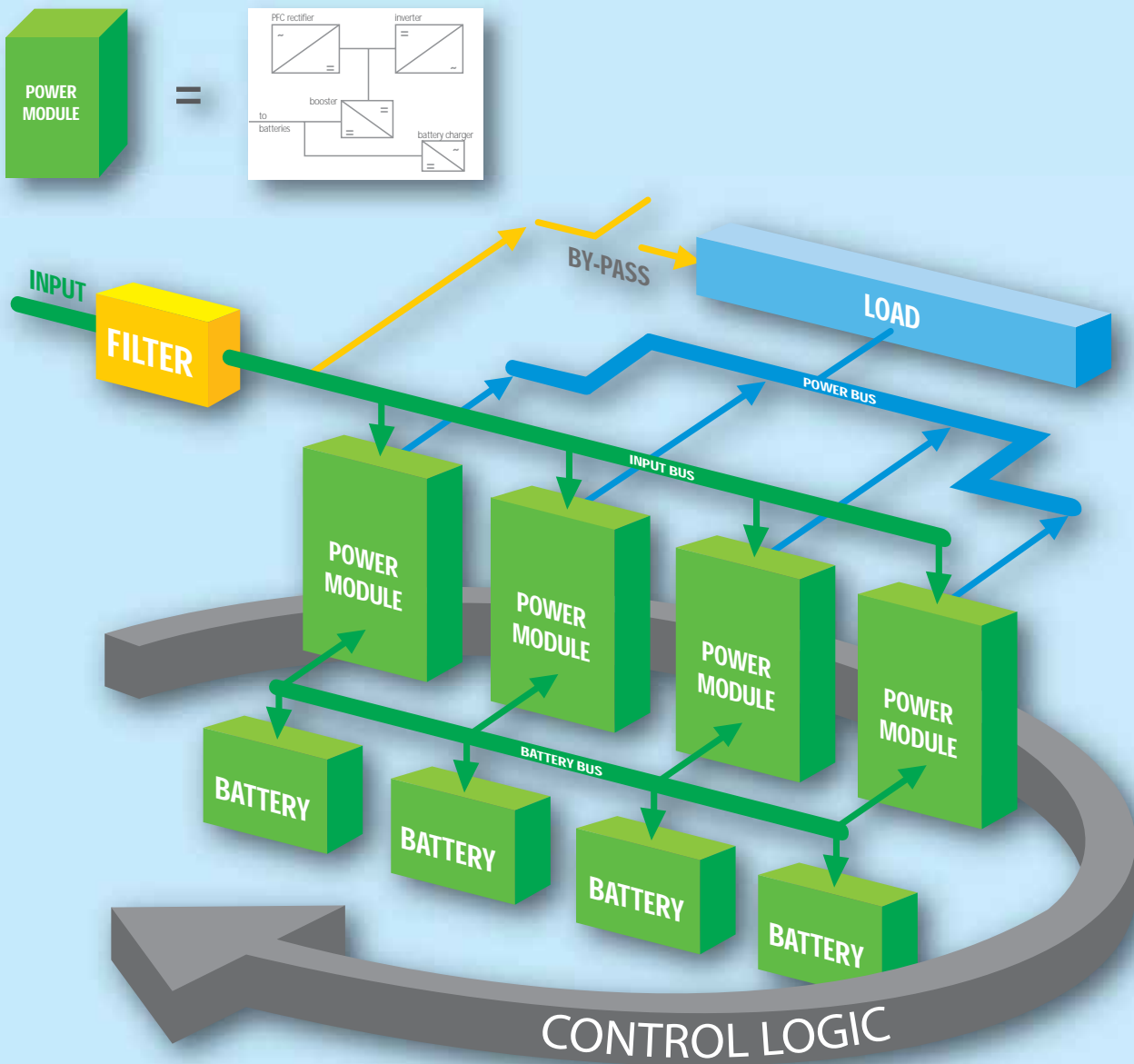
### RUNTIME

Runtimes can be rapidly and simply extended by fitting extra KB Battery Kits into the inverter cabinet or in special battery cabinets.

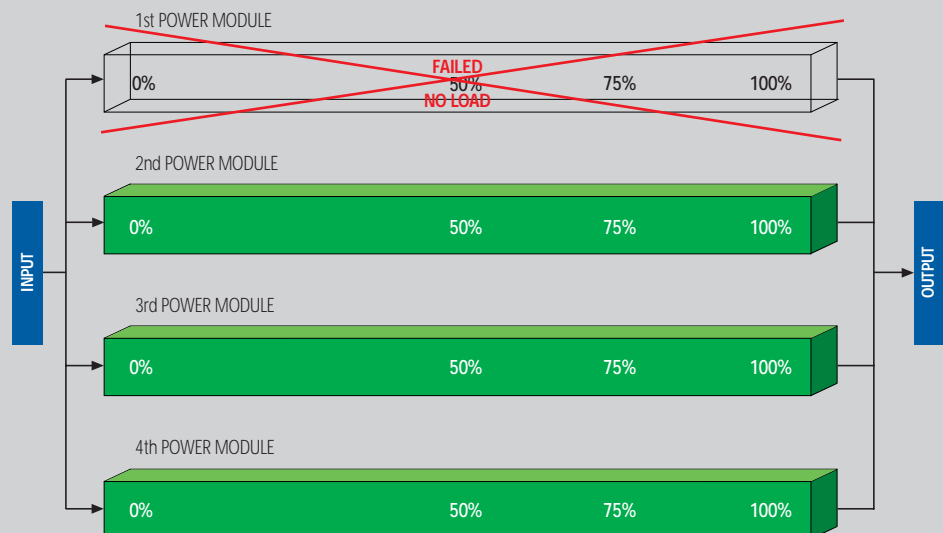
## High uptime

Operating continuity is guaranteed even if one of the modules develops a fault without any break or switchover thanks to parallel load sharing (all the modules share in supplying the load). If one of the modules stops working, the others will continue to power the load, redistributing the percentage of load that was previously supplied by the module now out of order.





The level of redundancy can be set via software or using the display: this also informs you when redundancy may be endangered, but not UPS operation, due to an increase in consumption.



```

Input
Power          1204W
Appar. Power   1207VA
U RMS          220V↓

```

```

Output
Power          951W
Appar. Power   951VA
U RMS          230V↓

```

### 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 in 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
Usage          0h↑
Cal.          Factory
Ext. KB Units  0KB↓

```

### 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 do "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.

```

Step N.       01/16
TurnOff
Weekly
**/** - Fri - 17:00

```

### 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
Forced Mode   ↑
DIP Speed
▶Off-line Mode ↓

```

```

Load Wait Mode
Enable
▶Min. Load Threshold

```

### By-pass

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).

```

R+x Redundancy 2

```

### 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.

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 memorisation of events facilitate the identification of hardware faults or UPS operating anomalies (overload, high temperature, etc.), making it possible to solve any problems much faster. 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, it indicates the percentage of charge available in real time.



Not only do the MegaLines offer all the usual features of the best on line 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.

**MetaSystem**

TEAM ENERGIZED

**Panasonic**



**High Frequency and high efficiency with a reduced footprint  
Static bypass**

**External maintenance bypass (optional)**

**Cold battery charging**

**Effective acoustic and visual signals, even from a considerable distance**

**Real time confirmation of remaining runtime and charge status on the LCD display**

#### **INPUT SECTION:**

- Input power factor > 0.99
- Input current THD < 3%
- Wide range of input voltage and frequency
- 50 Hz or 60 Hz operating frequency with automatic identification
- 50 Hz input - 60 Hz output frequency conversion or vice versa
- Extension of the input frequency range for operation with gen-sets
- DC start

#### **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

#### **EPO Contact (Emergency Power Off)**

#### **Free shutdown software**

can be downloaded from our website

#### **Output section:**

- Eco mode operation (energy saving)
- Load-waiting mode operation (protection on demand)
- Output voltage can be adjusted in 1-volt steps on the front panel
- Low noise levels
- Measurement of internal and external temperatures
- Ventilation control based on temperature and load
- Contact for remote emergency switch-off

Model	MegaLine 1250	MegaLine 2500	MegaLine 3750	MegaLine 5000
<b>SPECIFICATIONS</b>				
Nominal Power [VA]	1250	2500	3750	5000
Active Power [W]	875	1750	2625	3500
Max Power Scalability [VA]	5000			
Max Power Scalability [W]	3500			
Technology	On line double conversion (VFI)			
UPS Architecture	Modular, Scalable, Redundant N+X with 1250 VA power boards, contained in a cabinet			
<b>INPUT</b>				
Input Voltage [V]	230			
Input Voltage Range [V]	184 ÷ 264 @ 100% load			
Minimum Operating Voltage (on mains power) [V]	100 @ 50% load			
Input Current THD	< 3%			
Input Power Factor	> 0.99 from 20% load			
Input Frequency [Hz]	50 / 60 ± 2% autosensing			
<b>OUTPUT</b>				
Output Voltage [V]	230 ± 1%			
Output Frequency [Hz]	50 / 60 synchronized			
Output Voltage THD	< 1% with non-linear load			
Wave form	Sinusoidal			
Crest Factor	3.5 : 1			
Efficiency on mains (AC/AC on line)	92% @ 100% load			
Overload capacity	300% for 1 s - 200% for 5 s - 150% for 30 s			
<b>BATTERIES</b>				
Runtime @ 50% load [min]	20			
Runtime @ 80% load [min]	11			
Runtime Extendibility	Yes			
<b>GENERAL SPECIFICATIONS</b>				
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 ( <a href="http://www.metasystem.it">www.metasystem.it</a> )			
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	Schuko / Screw connector with 4-socket multiple extension cord (Italian/Schuko)			
<b>MECHANICAL SPECIFICATIONS</b>				
Net Weight [Kg]	23.5	34	43	53
Dimensions (W x H x D) [mm]	270 x 475 x 570			
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	-
<b>ENVIRONMENTAL DATA</b>				
Working Temperature [°C]	0 ÷ 40			
Relative Humidity	20% ÷ 80% non condensing			
Acoustic Noise @ 1 m [dBA]	< 40			
<b>STANDARDS</b>				
Standards	EN 62040-1-1, EN 50091-2, EN 62040-3			
<b>GUARANTEE</b>				
Guarantee	2 years, including batteries			
<b>ITEM CODE</b>	<b>P4201N</b>	<b>P4202N</b>	<b>P4203N</b>	<b>P4204N</b>

- Input power factor > 0.99**
- Input current harmonic distortion < 3%**
- Superior runtime scalability**
- Static bypass**
- Class A/B (immunity/emission)**
- Automatic sensing (input/output frequency)**
- Plug & play for gen-sets**
- Noise level < 40 dBA**
- Double IBC (intelligent battery charger)**
- Long life battery control**

The 5 double cabinet models can supply from 5000 to 10000 VA. They can house a maximum of 8 power boards, each supplying 1250 VA, and 10 battery kits in their bespoke 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.



MegaLine accessories	Description	Part number
PW 1250	Power upgrade	P4938M
Battery MegaLine	Extra battery cabinet	P4200Z
KB MegaLine/1	Runtime extension kit for inverter cabinet	P49273
KB MegaLine/2	Runtime extension kit for battery cabinet	P49274
MegaLine SPLITTER	Y-cable for the battery cabinet to battery cabinet connection	P49390M
PL MegaLine	Extended cable for battery/inverter cabinets tower configuration	P49460M
BP/1	Manual bypass for single cabinet units	P4936
BP/2	Manual bypass for double cabinet units	P4936A
CB 36	Battery charger	P49440
Relay Interface Kit	Relay contacts hardware support	P4920A
HF1	Remote control for switch on and off	P4930

For more details on hardware and software accessories, go to pages 68 - 73

Model	MegaLine 5000/2	MegaLine 6250/2	MegaLine 7500/2	MegaLine 8750/2	MegaLine 10000/2
<b>SPECIFICATIONS</b>					
Nominal Power [VA]	5000	6250	7500	8750	10000
Active Power [W]	3500	4375	5250	6125	7000
Max Power Scalability [VA]	10000				
Max Power Scalability [W]	7000				
Technology	On line double conversion (VFI)				
UPS Architecture	Modular, Scalable, Redundant N+X with 1250 VA power boards, contained in a cabinet				
<b>INPUT</b>					
Input Voltage [V]	230				
Input Voltage Range [V]	184 ÷ 264 @ 100% load				
Minimum Operating Voltage (on mains power) [V]	100 @ 50% load				
Input Current THD	< 3%				
Input Power Factor	> 0.99 from 20% load				
Input Frequency [Hz]	50 / 60 ± 2% autosensing				
<b>OUTPUT</b>					
Output Voltage [V]	230 ± 1%				
Output Frequency [Hz]	50 / 60 synchronized				
Output Voltage THD	< 1% with non-linear load				
Wave form	Sinusoidal				
Crest Factor	3.5 : 1				
Efficiency on mains (AC/AC on line)	92% @ 100% load				
Overload capacity	300% for 1 s - 200% for 5 s - 150% for 30 s				
<b>BATTERIES</b>					
Runtime @ 50% load [min]	20				
Runtime @ 80% load [min]	11				
Runtime Extendibility	Yes				
<b>GENERAL SPECIFICATIONS</b>					
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 ( <a href="http://www.metasystem.it">www.metasystem.it</a> )				
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	Screw connector				
<b>MECHANICAL SPECIFICATIONS</b>					
Net Weight [Kg]	24 + 50	26.5 + 57.5	29 + 65	31.5 + 72.5	34 + 80
Dimensions (W x H x D) [mm]	2 x (270 x 475 x 570)				
Power Modules Installed	4	5	6	7	8
Power Scalability Slots Available	4	3	2	1	-
Battery Kits Installed	4	5	6	7	8
Runtime Extension Slots Available	6	5	4	3	2
<b>ENVIRONMENTAL DATA</b>					
Working Temperature [°C]	0 ÷ 40				
Relative Humidity	20% ÷ 80% non condensing				
Acoustic Noise @ 1 m [dBA]	< 40				
<b>STANDARDS</b>					
Standards	EN 62040-1-1, EN 50091-2, EN 62040-3				
<b>GUARANTEE</b>					
Guarantee	2 years, including batteries				
<b>ITEM CODE</b>	<b>P4205N</b>	<b>P4206N</b>	<b>P4207N</b>	<b>P4208N</b>	<b>P4209N</b>

Model	Nominal Power [VA]	Runtime @ 80% load [min]	Battery MegaLine	KB MegaLine/1	KB MegaLine/2	MegaLine Splitter
MEGALINE 1250	1250	15	0	1	0	0
		30	0	2	0	0
		45	0	3	0	0
		60	1	0	4	0
		90	1	0	6	0
		120	1	0	7	0
		150	1	0	9	0
		180	1	0	10	0
MEGALINE 2500	2500	15	0	1	0	0
		30	1	0	3	0
		45	1	0	5	0
		60	1	0	7	0
		90	1	2	9	0
		120	2	0	14	1
		150	2	0	17	1
		180	2	0	20	1
MEGALINE 3750	3750	15	1	0	2	0
		30	1	0	5	0
		45	1	0	8	0
		60	1	0	10	0
		90	2	0	16	1
		120	2	1	20	1
		150	3	0	26	2
		180	3	0	30	2
MEGALINE 5000	5000	15	1	0	2	0
		30	1	0	6	0
		45	1	0	10	0
		60	2	0	14	1
		90	3	0	21	2
		120	3	0	28	2
		150	4	0	34	3
		180	4	0	40	3

Model	Nominal Power [VA]	Runtime @ 80% load [min]	Battery MegaLine	KB MegaLine/1	KB MegaLine/2	MegaLine Splitter
MEGALINE 5000/2	5000	15	0	0	2	0
		30	0	0	6	0
		45	1	0	10	1
		60	1	0	14	1
		90	2	0	21	2
		120	3	0	28	3
		150	3	0	34	3
		180	4	0	40	4
MEGALINE 6250/2	6250	15	0	0	2	0
		30	1	0	7	1
		45	1	0	12	1
		60	2	0	17	2
		90	3	0	26	3
		120	3	0	34	3
		150	4	0	42	4
		180	5	0	50	5
MEGALINE 7500/2	7500	15	0	0	3	0
		30	1	0	9	1
		45	2	0	15	2
		60	2	0	20	2
		90	3	0	31	3
		120	4	0	51	4
		150	5	0	51	5
		180	6	0	60	6
MEGALINE 8750/2	8750	15	0	0	3	0
		30	1	0	10	1
		45	2	0	17	2
		60	3	0	24	3
		90	4	0	36	4
		120	5	0	48	5
		150	6	0	59	6
		180	7	0	70	7
MEGALINE 10000/2	10000	15	1	0	3	1
		30	1	0	12	1
		45	2	0	20	2
		60	3	0	27	3
		90	4	0	41	4
		120	6	0	55	6
		150	7	0	68	7
		180	8	0	80	8



You can download the **UPS Configurator** free of charge from our website: [www.metasystem.it](http://www.metasystem.it). 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.

