

Multi Power2



DATACENTER



INDUSTRY



TRANSPORT

3:3 500-1000-1250-1600 kW



ONLINE



Modular



Lithium compatible



SmartGrid ready



USB plug



HIGHLIGHTS

- **Ultra-high efficiency**
- **Ultimate availability**
- **Risk-free scalability**
- **Smart Modular Architecture (SMA)**
- **Truly sustainable**

Riello UPS's Multi Power modular range has been efficiently protecting the supply of critical applications around the world for almost a decade. With thousands of power modules deployed across the globe, it is recognised as a high performing and ultra-reliable system.

Treasuring the previous experience and deeply understanding our customers' needs, we conceived a second generation of modular solutions for critical high-density computing environments encompassing small, medium and large data centers, as well as any other critical power application.

Riello Multi Power2 is the evolution of our modular UPS, which aims to offer higher power density, simpler integration to both existing and new installations and last but

not least enhanced operating efficiency and global flexibility to reduce both the upfront investment and the day-to-day operational costs.

It is the result of our efforts to provide a more sustainable, compact and reliable power supply suitable for the most demanding applications, not only in high-density critical IT environments, but wherever energy continuity is a must and has to be ensured without any compromise in terms of performance. Thanks to its modular architecture, the system can be adapted to the load demands to avoid any oversizing and provide the best performance in every working condition.

With a new extremely high-density power module, available in two different models,

our solution reaches up to 1600 kW in a single UPS and up to 6400 kW with 4 systems in parallel.

EFFICIENT AND SUSTAINABLE

One of the biggest challenges of our time is sustainability, not only in the Data Center industry but across many other fields, such as healthcare, power generation, telecommunications, trade and education.

This is the reason why we have developed the new best-in-class power module based on the latest silicon carbide technology (SiC), which reduces cooling requirements and allows for more compact, more reliable and more robust solutions.

Our modules reach an efficiency up to 98.1% in ON LINE double conversion, providing the best power supply to critical equipment whilst minimising operating costs and energy losses.

High efficiency is achieved even in case of extremely low loads thanks to EFFICIENCY CONTROL Mode, where our system will automatically activate only the required number of Power Modules, ensuring the highest efficiency and granting, at the same time, the redundancy level requested. Moreover Multi Power2 is able to work in temperatures up to 40 °C (without any derating), minimising the demand and consumption of cooling systems.

Our units deploy such advanced technologies that they offer faster and more reliable communication between all the system parts and achieve outstanding dynamic performances.

FLEXIBLE AND SCALABLE

Multi Power2 has been designed to be easy scalable and quickly adaptable to any increase in load, providing a pay-as-you-grow approach that optimises both the initial investment and the TCO (Total Cost of Ownership).

The range consists of:

- MP2 – Multi Power2 up to 500 kW;
- M2S – Multi Power2 Scalable from 1000 kW to 1600 kW.

The MP2 frame can host up to 8 modules while M2S accepts up to 30 modules (according to the cabinet power and the redundancy requirements).

Power Modules are available in two different 67 kW - 3U versions: the standard one (IGBT) can reach a 96.5% efficiency, whereas the BLUE one (SiC) boasts outstanding efficiency of 98.1% in ON LINE Mode.

The modules are designed to be fully independent, hot-swappable, mechanically segregated and with embedded selective disconnection at both the input and output stage. The Bypass is modular and fully rated according to the maximum power of the system (500 kW, 1000 kW, 1250 kW, 1600 kW), enabling it to clear higher short circuit currents.

SMART MODULAR ARCHITECTURE (SMA)

Our Smart Modular Architecture (SMA) is the result of a new design approach focused on a deep interconnection between hardware and software. It provides an extremely reactive system which ensures business continuity in every operating condition.

Multi Power2 is a step forward in every part of the system, from the power module to the HMI passing through the cabinet:

- Intelligence is distributed to avoid any single point of failure and ensure the protection of the equipment even on the off chance of a failure.
- Automatic health-checks are performed during the plug-in of each module to verify its status and avoid defective components. Operation is completely risk-free and enables the user to increase the power or redundancy of the system while the UPS is protecting the



Power Module 67 kW (IGBT) - MP2 67 PM.



Power Module 67 kW (SiC) MP2 67 PM BLUE.

load. If a module has a different firmware version, the system aligns it to one of the other modules.

- Comprehensive upgrade of the firmware can be performed while the unit is working in ON LINE double conversion.
- Continuous monitoring is possible thanks to the several sensors embedded in each module: they allow the user to check the status of the UPS and analyse the running and environmental parameters to ensure the best operating performances. This helps to identify specific predictive maintenance services based on the actual working conditions.
- Embedded interleaving technology grants a significant reduction of the ripple current values and extends the lifespan of the batteries and DC capacitors.

RELIABLE AND RESILIENT

The Multi Power2 is extremely reliable as it is designed to avoid any single point of failure. This principle is applied

98%

Efficiency

ON LINE double conversion

=



18 tons

of CO₂ saved



12 k€

energy bill savings

Yearly values calculated for MP2 500 kW UPS with BLUE modules compared to 96% efficiency UPS, considering 50% average load, cooling COP=3, 0.3 kg CO₂ & 0.2 € per kWh

to all the parts of the unit, even to the internal communication structure, which is completely redesigned and now made by two separate and fully redundant high-speed buses. To provide the highest level of quality and process control, each component of the system, from the modules to the cabinet, is designed and manufactured in Italy; moreover, all component suppliers are carefully selected through a strict process of approval. At the end of our production line, all modules and full units undergo specific tests to verify that each component operates correctly.

All collected measurements and data are analysed to keep improving our products and provide our customers with the most updated technologies.

To enhance the lifespan of the UPS, each module incorporates status counters, as well as temperature and humidity sensors, providing real-time analytics for operators.

EXTREMELY FLEXIBLE

The Multi Power2 has been conceived to be fully customisable to meet the specific needs of each installation and quickly adapt to the load increase.

Thanks to the hot-swappable features, the increase of power can be done while the unit is working in ON LINE double conversion without any disruption to the load.

All the major components of the UPS are modular and can be easily added and/or replaced by the engineer, minimising the site intervention cost and avoiding any downtime.

The Multi Power2 is available in many configurations and frames:

- **PCM:** very compact solution with integrated manual bypass.
- **PCO:** unit supplied with unique I/O and without switches to simplify the integration with the existing electrical infrastructure and to meet any space constraints.

- **PCS:** fully integrated, for a complete, simple and very reliable installation, with main input, bypass, manual bypass and output switches.

The units have been designed with several standard features:

- Top or bottom cable entry;
- Air filter;
- Fans monitoring;
- Backfeed detection circuit and protection;
- EFFICIENCY CONTROL Mode;
- ACTIVE ECO Mode;
- Power walk-in;
- Separate or common batteries;
- Compatibility with several storage technologies: VRLA, Li-Ion, NiCd, Supercaps;
- Smart grid ready.

A full set of options is available to fit the requirements of each installation, in both IT and non-IT environment:

- Parallel kit;
- Cold start kit;
- Internal backfeed protection device;
- Bottom cable entry for MP2 500;
- Overall coating treatments;
- IP 31 protection;
- Power bars Thermoscan;
- Connection cabinet (2x MP2 500);
- Synchronisation device (UGS);
- Hot connection device (PSJ).

USER FRIENDLY

The Multi Power2 is equipped with a 10" colour touch screen display that simultaneously provides information, measurements and operating states of the entire system and of each individual power module. The user interface also includes a LED bar which delivers immediate and clear information regarding the current status of the UPS. To ensure a simple, quick and full connection to the existing infrastructure, by default all Multi Power2 units are equipped with:

- network card NetMan 208;
- embedded configurable In/Out signals



Best in class footprint

500 kW in just 0.52 m²
1.75 kW / dm³ for the power module

(10 inputs and 8 outputs);

- 2 free slots for the installation of optional communication accessories such as network adaptors and extra volt free contacts;
- R.E.P.O. Remote Emergency Power Off.

The units are also compatible with:

- PowerShield³ monitoring and shutdown software included for Windows operating systems 11, 10, 8, Server 2022, 2019, 2016 and previous versions, Windows Server Virtualization Hyper-V, macOS, Linux, Citrix XenServer and other Unix operating systems;
- RielloConnect for remote and proactive monitoring services.

ULTRA SERVICEABILITY

The unit was carefully engineered to simplify positioning, installation and maintenance operations.

Connection terminals are accessible straight from the front of the unit for a safe and easy deployment.

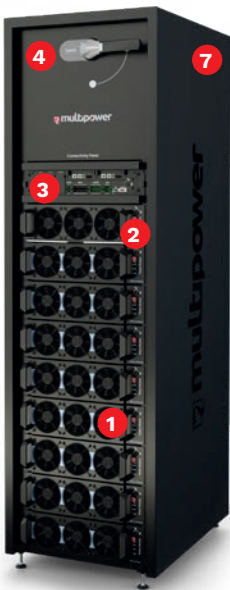
All main elements are accessible from the front and, since they are hot-swappable, they can be replaced without any risk while the unit is still protecting the load, minimising the Mean Time to Repair (MTTR).

Thanks to the embedded intelligence, powerful computing capacity and outstanding connectivity, we can monitor

remotely the status of the UPS and provide dynamic and bespoke services to increase its lifespan.

OVERVIEW

**Power cabinet
MP2 500 PCM**



**Power cabinet
M2S 1250 PCS**



1. 67 kW - 3U Power Modules.
2. Modular static bypass.
3. Connectivity Panel with:
 - In/Out signals (10 input, 8 output);
 - NetMan 208;
 - 2 extra communication slots;
 - R.E.P.O.
 - Parallel slots.

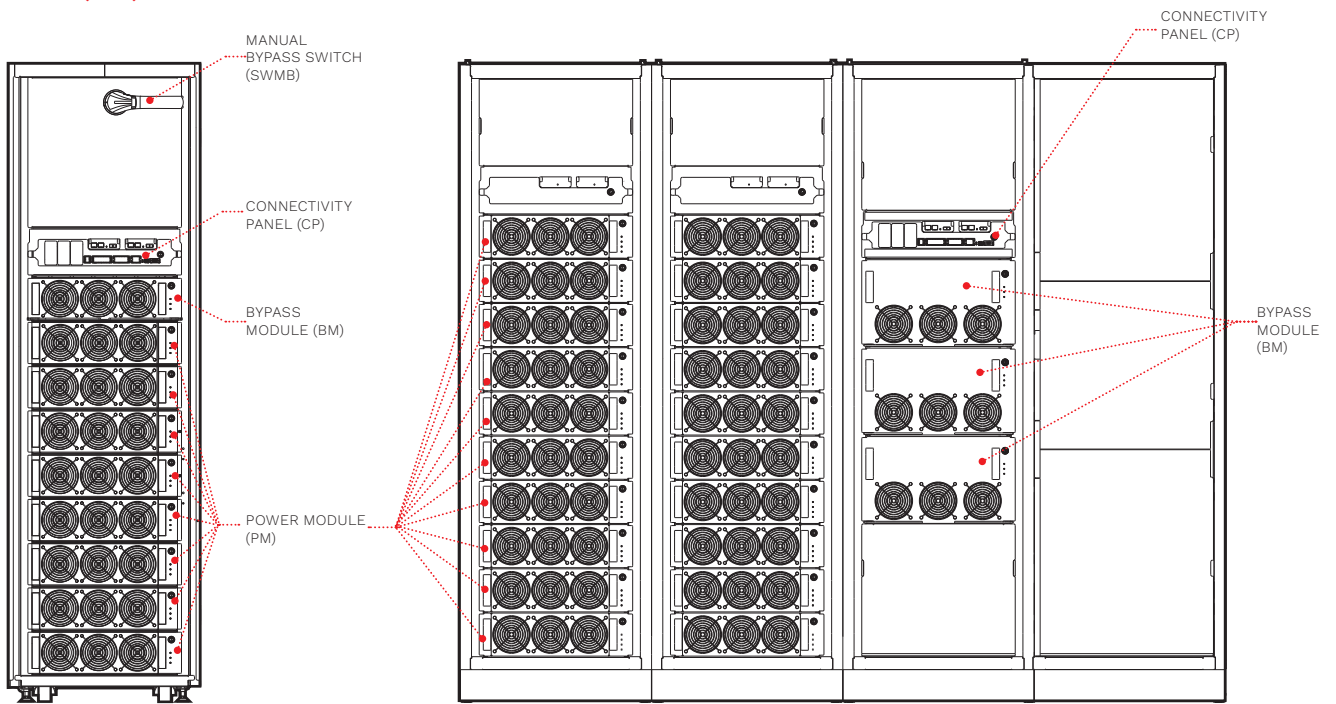
4. Manual bypass switch, standard for all MP2 500 PCM.
5. 6. I/O cabinets, complete with main input switch (5)* and bypass, manual bypass and output switches (6)*.
7. Cable entry:
 - MP2 500: Top (bottom optional);
 - M2S 1000/1250/1600: Top or bottom.

*Available for PCS versions.

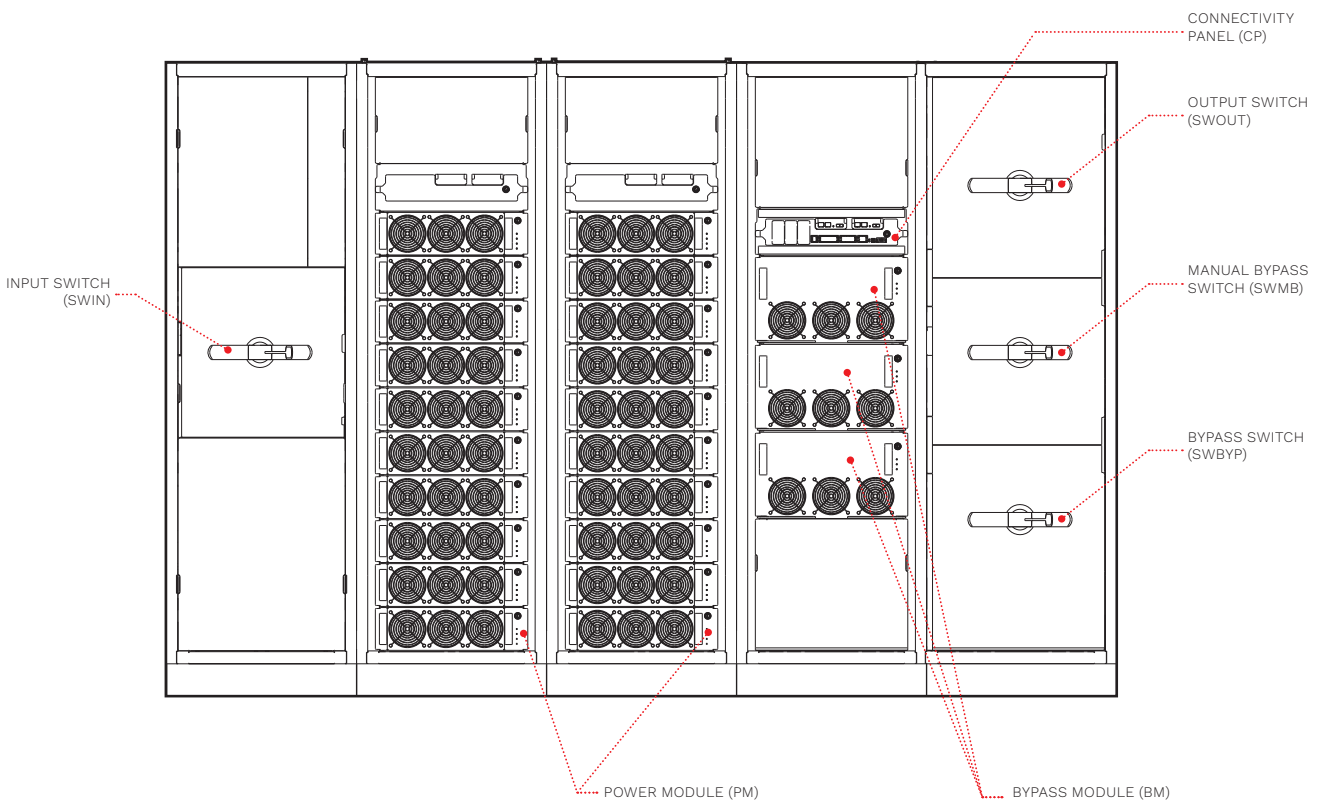
DETAILS

MP2 500 PCM
with manual bypass
up to 500 kW
(front)

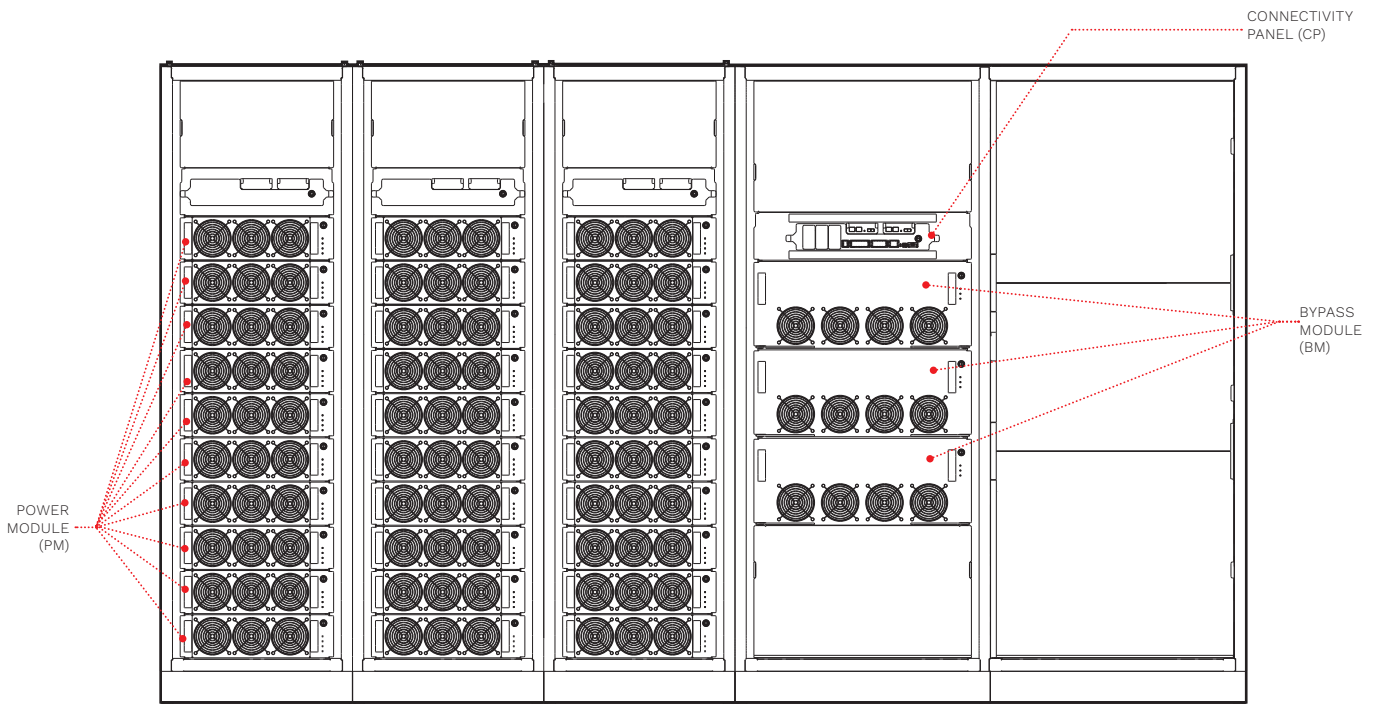
M2S 1000-1250 PCO
without switches, up to 1000 or 1250 kW
(front)



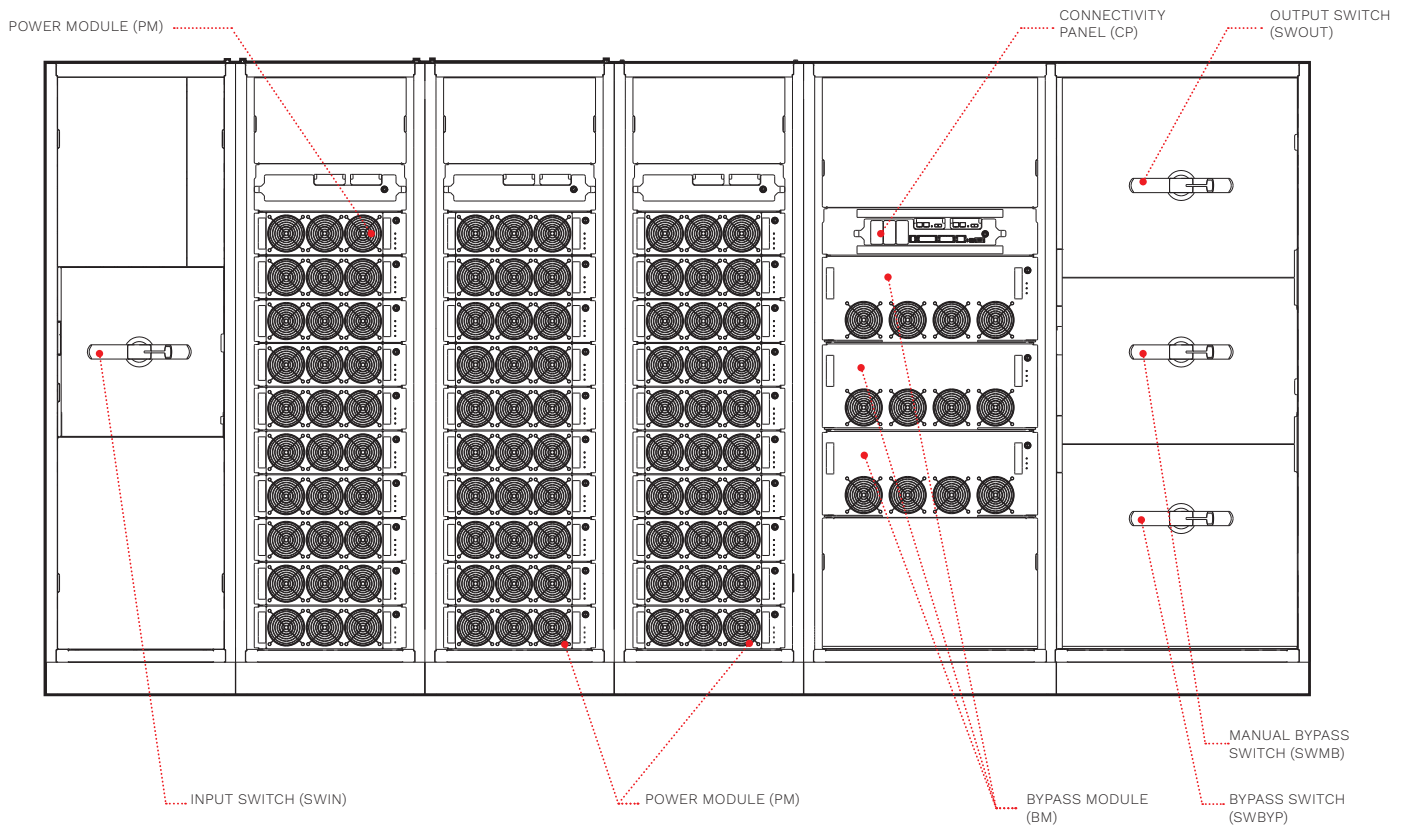
M2S 1000-1250 PCS
with input, bypass, output and manual bypass switches
up to 1000 or 1250 kW
(front)



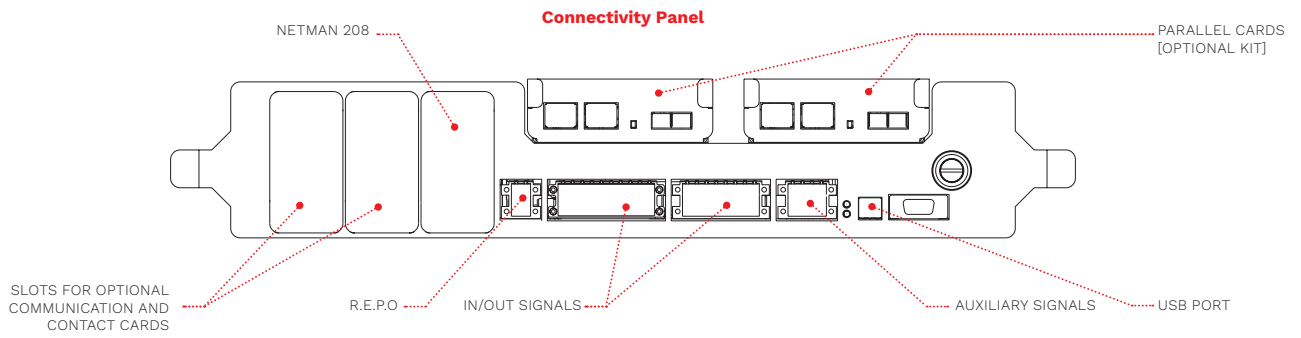
M2S 1600 PCO
without switches, up to 1600 kW
(front)



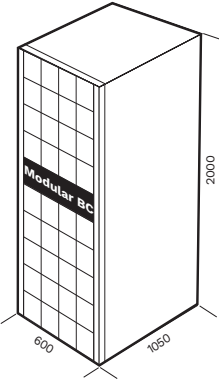
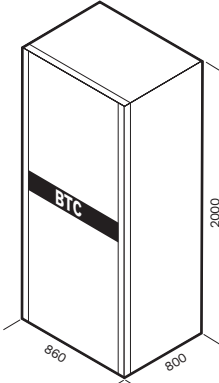
M2S 1600 PCS
with input, bypass, output and manual bypass switches
up to 1600 kW
(front)



DETAILS



BATTERY CABINETS

MODELS	MPW BATTERY CABINET / MPW 170 BTC (MODULAR BATTERY CABINET)	BTC 2000 480V BB V8 3T BTC 2000 480V BB V9 3T BTC 2000 480V AB V9 3T (CONVENTIONAL BATTERY CABINET)
UPS MODELS	Select the Battery configuration according to UPS rated power	
Dimensions [mm]		

OPTIONS

SOFTWARE	PRODUCT ACCESSORIES
PowerShield ³	Parallel Kit
PowerNetGuard	Battery temperature sensor
	IP31 Protection Kit
ACCESSORIES	Programmable relay board
NETMAN 208	MULTICOM 392
MULTICOM 302	Connection cabinet (2x MP2 500)
MULTICOM 352	Cold Start
MULTICOM 372	Coating treatment
MULTICOM 411	Thermalscan
MULTICOM 421	ENERGYMANAGER
MULTI I/O	
MULTIPANEL	

MODEL	Multi Power2 – from 500 to 1600 kW			
INPUT				
Rated voltage [V]	380 / 400 / 415 three-phase + neutral			
Rated frequency [Hz]	50 / 60			
Voltage tolerance [V]	240 ¹ - 480			
Frequency tolerance [Hz]	40 - 72			
Power factor	0.99			
THDI	<3%			
BYPASS				
Nominal power [kW]	500 - 1000 - 1250 - 1600 (According to system power configuration)			
Rated voltage [V]	380 / 400 / 415 three-phase + neutral			
Voltage tolerance [V]	from 180 (adjustable 180-200) to 264 (adjustable 250-264) referring to Neutral			
Rated frequency [Hz]	50 or 60			
Frequency tolerance	±5% (selectable)			
Overload	125% for 10 min; 150% for 1 min			
BATTERIES				
Battery arrangement (parallel systems)	Separate/common			
Type	VRLA, NiCd, Li-Ion, Supercaps			
Recharging method	One level, Two level, Cyclic recharge (selectable)			
OUTPUT				
Rated voltage [V]	380 ² / 400 / 415 three-phase + neutral			
Rated frequency [Hz]	50 or 60			
Voltage stability	±1%			
Dynamic stability	EN62040-3 class performance 1 non linear load			
OVERALL SPECIFICATIONS				
Cabinet type	MP2 500 Power Cabinet	M2S 1000 Power Cabinet	M2S 1250 Power Cabinet	M2S 1600 Power Cabinet
UPS Nominal Power ³ [kW]	500	1000	1250	1600
Bypass Power [kW]	500	1000	1250	1600
Power factor [pf]	1			
Module slots available	8	20	20	30
Number of PM to reach full power	8x MP2 67 PM	15x MP2 67 PM	19x MP2 67 PM	24x MP2 67 PM
Parallelable up to	4 units			
Max power expandability [kW]	2000	4000	5000	6400
Dimensions (WxDxH) [mm] & weight [kg] PCM ⁴ Type	600x870x1995 640	N.A.	N.A.	N.A.
Dimensions (WxDxH) [mm] & weight [kg] PC0 ⁵ Type	N.A.	2400x1025x2000 1866	2400x1025x2000 2014	3400x1025x2000 2465
Dimensions (WxDxH) [mm] & weight [kg] PCS ⁶ Type	N.A.	3000x1025x2000 2216	3000x1025x2000 2364	4000x1025x2000 2815
System Noise Level [dBA±2] ¹	<69			<75
ECO Mode Efficiency	up to 99%			
Cabinet IP rating	IP20 (IP31 as optional)			
Cable Input	Front access - top (bottom with optional)	Front access - top or bottom		
Colour	RAL 9005			
Ambient temp. for the UPS	0 °C - +40 °C			
Ventilation	Front to rear			
Range of relative humidity	5-95% non-condensing			
Standards	European directives: LV 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2; RoHS compliant Classification in accordance with IEC 62040-3 (Voltage Frequency Independent) VFI - SS - 111			
Moving UPS cabinet types	Castors (cabinets shipped without PM)		Pallet jack	

¹ Conditions apply.

² For wider tolerance conditions apply.

³ Power rating between 500 kW and 1600 kW can be settled with a selected number of Power Modules.

⁴ With Manual Bypass switch only, weight including Power Modules to reach full power.

⁵ Without Input, Bypass, Output, Manual Bypass Switches, weight including Power Modules to reach full power.

⁶ With Input, Bypass, Output, Manual Bypass switches, weight including Power Modules to reach full power.