riello ups

DATACENTRE TRANSPORT

Multi Power

VFI TYPE
ONLINE

Modular

ECO LEVEL 6

3:3 1-28 x 42 kW
up to 1 MW
+ redundancy

USB plug

SmartGrid ready

HIGHLIGHTS

- **Utmost Availability**
- **Ultimate Scalability**
- **Unmatched Power Density**
- **Efficiency > 96,5%**
- **Multiple Controls**
- **Highly Flexible**
- **Multiple comms**

The Riello MULTI POWER (MPW) is the ultimate modular UPS for DATA CENTRES and other CRITICAL LOADs.
The MULTI POWER is designed to protect any critical high-density computer and IT environment, whilst achieving maximum availability. The MPW grows along with the demands of the business without over-sizing the UPS - optimizing both the initial investment and the Total Cost of Ownership.
As soon as demand increases, the Riello MPW modular solution can expand its power capability, maintaining the highest levels of power protection, availability, redundancy and investment savings.
Digital technology has an increasingly strong influence on day-to-day activities in almost all sectors and applications such as healthcare, power generation, social networking, telecommunications, commerce and education.
Subsequently, any activities and equipment related to data storage, processing and transfer should be supplied from the most reliable power source. Multi Power ensures that a scalable, secure, high quality power supply is available for a variety of critical load applications. The new MPW **Power Modules** feature the very latest in UPS technology.
With its three level Neutral Point Clamped (NPC) inverter and Power Factor Corrected (PFC) input control, the MPW ensures the highest level of performance in terms of overall efficiency, input power factor and harmonic impact on the supply source.

Advanced Technology

To ensure the highest levels of power availability, only the most reliable, cutting edge power components and innovative control technologies have been used in the development of the MPW power modules and other major aspects of the system. The major power components and assemblies within the MPW have been specifically designed and tailor made in conjunction with the respective component manufacturers. This design work ensures that the MPW achieves the highest levels of power and performance.
In order to optimize the overall performance of the finished product, Riello's R&D team made the decision to specifically design certain power components, including the IGBT modules and associated packages. Rather than using standard components that are readily available in the marketplace, the Multi Power hosts one single optimised and reliable power assembly which guarantees the best availability and overall efficiency.
The Power Module itself utilizes a "wireless power principle" meaning that the power interconnection distances between the cards, power components and connectors are shorter. In this way we reduce any risk related to connection problems between the assemblies and also minimize the overall power losses.

Scalability

Multi Power provides a comprehensive, easy-to-integrate power protection solution for data centers and any critical IT application matching the evolving demands of a networked environment.
The end user can easily increase power, redundancy level and battery autonomy by simply adding additional UPS **Power Modules** and **Battery Units**.
Two different cabinet frames are available to build the system: The **Power Cabinet** and the **Battery Cabinet.**
The available UPS power and redundancy level can expand vertically from 42 to 294kW in one single Power cabinet (1 to 7 Power Modules including redundancy). Similarly up to four Power Cabinets can be connected in parallel, increasing the capacity from 294kW up to 1176kW. The Battery cabinet accommodates multiples of 4 battery units, with up to 36 units within a single frame with a maximum of 10 Battery cabinets connected in parallel.
In addition, the MPW is available as an optimized solution providing a Multi Power/ Battery combination with three UPS Power Module slots and five battery shelves. This solution can be utilized within extremely compact areas requiring a small footprint with maximum power density. This modular and reliable solution is perfect for any small to medium business applications.

Outstanding Performances

- The advanced technologies deployed within the MPW guarantees full rated power even with unity power factor loads (kVA=kW) without any power downgrading even when operating at temperatures up to 40°C.
- High system efficiency whilst operating in on-line double-conversion mode greater than 96,5%. Even when loaded at only 20%, the MPW still achieves an outstanding performance greater than 95%. This superior performance ensures extremely low losses at any load level whilst maintaining a true modular solution for any changing UPS environment in terms power demands.
- Low input harmonic pollution, with near unity input power factor and an extremely wide input voltage operating range (+20/-40%), requiring only a minimum upstream power source rating and subsequent reduced investment costs.

Multiple Controls

The entire Multi Power solution was developed with particular care to ensure operational reliability and prevent any possible failures due to miscommunication between the component parts of the system. The Power Modules are not controlled by one unique microprocessor, but by three - each having different and specific duties. Likewise, the Power cabinet features two separate microprocessors; one to regulate the overall UPS operations and a separate one to manage communication with the user.
In addition, three dedicated communications bus manage and transmit the data.
In terms of the monitoring and control of the overall system, all major components are continually temperature monitored within

Power Module 42 kW

Battery Shelf - 4 x Battery Units

Power Cabinet (1÷7 x Power Modules) x 4

each of the Power Modules. In addition, up to four-temperature sensors are embedded within the Power cabinet to ensure constant and efficient operation.
The UPS module is equipped with three

Combo Cabinet 1÷3 x Power Modules + 1÷5 Battery Shelves.

speed controlled fans to ensure tthere is no energy wasted as the load level applied to the system increases or decreases. At the same time each fan features a so-called third wire (the controller) which immediately warns the microprocessor in the event of a fault; in which case the microprocessor will increase the speed of the remaining operational fans in order to compensate for the cooling deficiency. The Battery unit also contains dedicated internal protection and a sophisticated control system to monitor the status of each module. This makes it possible to check the voltage/current supplied by each single battery module and therefore identify and warn the user if one of them is defective or beginning to fail. This significantly reduces the risk of a battery pack failure causing a problem to the system by immediately warning the user of the impending issue in order for the appropriate preventive actions to be taken before it is too late.

Flexible Modularity

Multi Power grows both horizontally and vertically from 1 to 28 Power Modules increasing from 42 to 1176kW (including redundancy) as well as battery units (from 1 cabinet up to 10), therefore the system is completely scalable in accordance with any business requirements.
The Plug & Play modular concept simplifies any power or battery autonomy expansion process, rather than a complete Power Module or Battery unit replacement.

Battery Cabinet with open and closed door.

The modular hot-swappable principle is further extended to all major elements of the system, resulting in convenient replacement of parts such as fans from within individual Power Modules rather than accessing major components within the cabinet. Furthermore, all power modules and critical components are easily accessible from the front of the

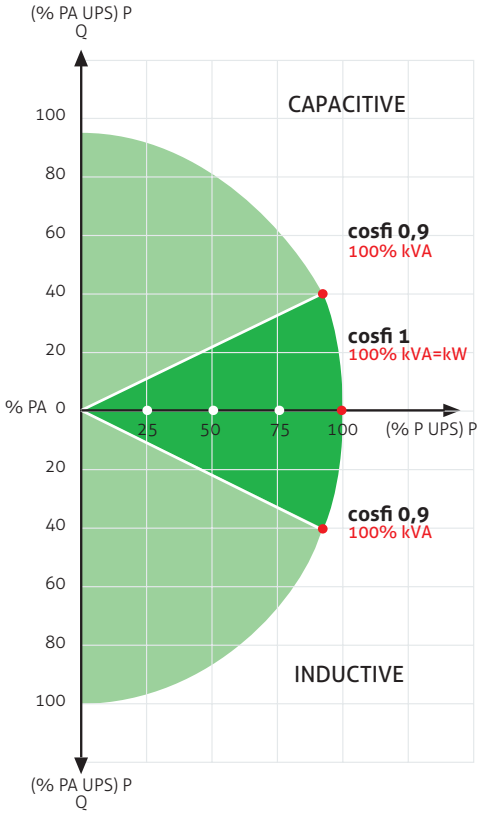
unit as standard. The system is equipped with a **Manual bypass** change over switch and **Backfeed** control with a mechanical interlock contactor inbuilt, eliminating any maintenance-related downtime.
Combination systems (Power cabinet with Battery cabinet) are supplied with a battery switch and shunt trip to enable remote battery switch operation.
All these features ensure easy UPS expansion, operation and maintenance; minimizing downtime, decreasing the Mean Time to Repair (MTTR) and removing any possible risk to power continuity, when carried out by authorized service personnel.
Flexibility is measured by the ease of both on site installation and the operations undertaken by the user. Input/Output/ battery terminal bars are deployed enabling authorized installers to easily terminate the cables either from the top or the bottom of the system. Mechanical supports and cable glands as well as the terminal bar positioning (in the centre of the cabinet) are purposely positioned to reduce the installation time and costs.

Advanced Communications

Users can benefit from the different communication systems developed specifically for IT personnel, facilities managers and service engineers.
The 7"LCD touch screen, communication slots, relay cards along with the dedicated service ports, all ensure that the UPS setup, control and monitoring is easy, along with the intergration into any building management system and data center infrastructure management (DCIM). Multi Power is compatible with the very latest operating systems including

- Windows 7, 8
- Hyper-V
- Windows Server 2012, 2008, and previous versions
- Mac OS X
- Linux
- VMWare ESXi
- Citrix XenServer

and many other Unix operating systems.



OPTIONS

SOFTWARE
PowerShield³
PowerNetGuard

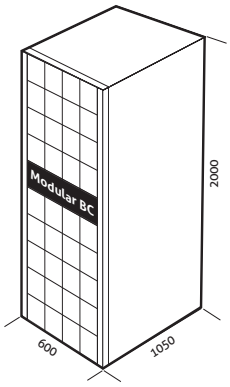
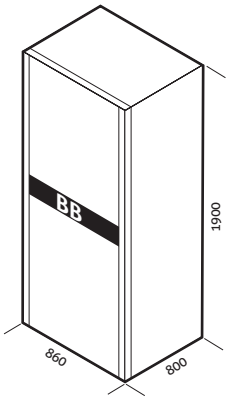
ACCESSORIES
NETMAN 204
MULTICOM 302
MULTICOM 352
MULTICOM 372
MULTICOM 382
MULTICOM 401

MULTI I/O
Interface kit AS400
MULTIPANEL
RTG 100
GSM Modem

PRODUCT ACCESSORIES
Battery temperature sensor
Programmable relay board MULTICOM 392

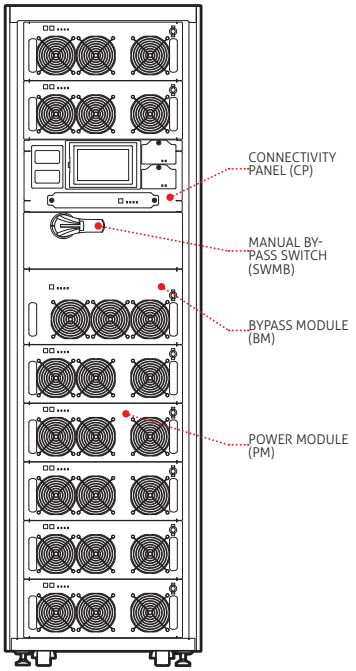
MPW LCD Touch screen: user friendly UPS configuration and monitoring display.

CABINETS

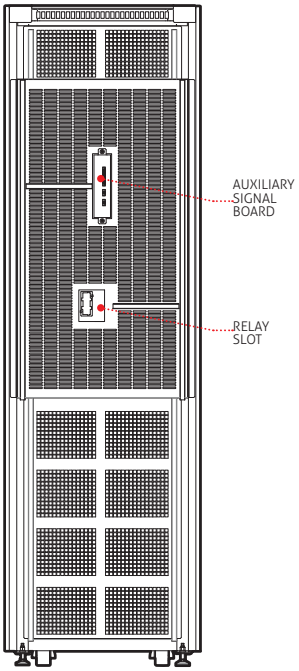
MODELS	CABINET MPW BATTERY	BB 1900 480-V6 / BB 1900 480-V7 BB 1900 480-V8 / BB 1900 480-V9 AB 1900 480-V9
UPS MODELS	Select the Battery configuration according Multi Power range	
Dimensions (mm)		

DETAILS

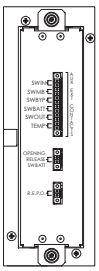
MPW Power Cabinet 42-294 kW (front)



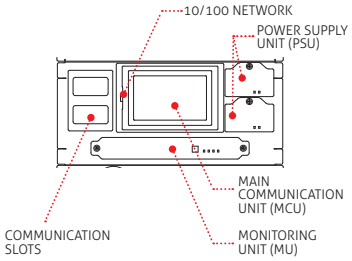
MPW Power Cabinet 42-294 kW (back)



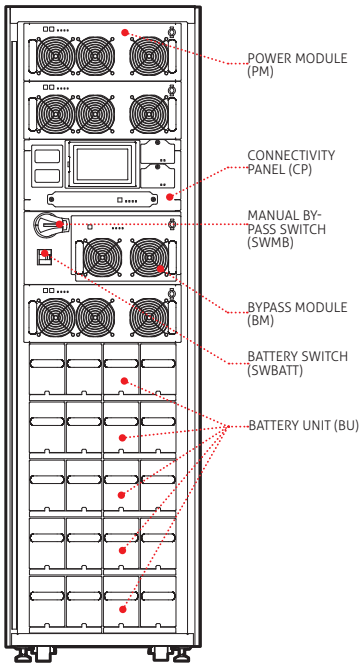
AUXILIARY SIGNAL BOARD



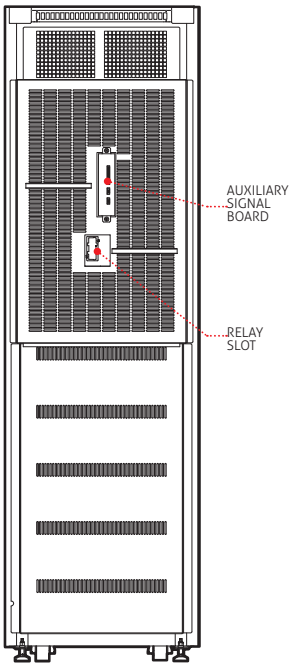
CONNECTIVITY PANEL (CP)



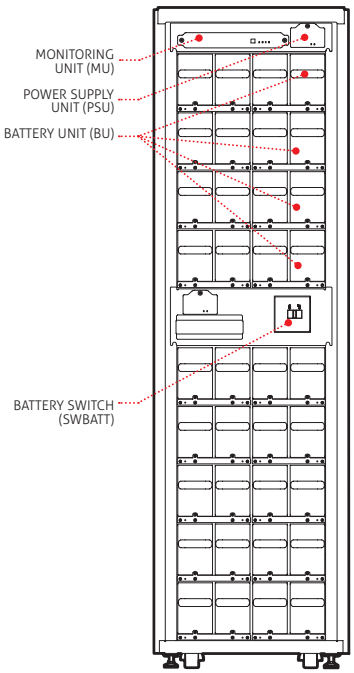
MPW Combo Cabinet 42-126 (front)



MPW Combo Cabinet 42-126 (back)



MPW Battery Cabinet (front)



MODEL	MPW - from 42 to 294 kW[1]		
INPUT			
Voltage [V]	380-400-415 Vac Three-Phase plus neutral		
Voltage tolerance [V]	240 to 480 V[2]		
Frequency tolerance [Hz]	40 to 72		
Power factor	1		
THDI [%]	< 3,5		
BYPASS			
Nominal power [W]	252 (Power Cabinet) / 126 (Combo cabinet)		
Nominal voltage [V]	380-400-415 Vac Three-Phase plus neutral		
Voltage tolerance [V]	from 180V (adjustable 180-200) to 264 V (adjustable 250-264V) referring to Neutral		
Nominal frequency [Hz]	50 or 60		
Overload	125% for 10 minutes; 150% for 1 minute		
BATTERIES			
Layout	Modular type made up by Battery Unit (named BU) or Free Standing Battery Box / Shelf		
Battery Unit features	VRLA batteries lined up Constant voltage and current measuring Battery status monitoring via MPW LCD display		
OUTPUT			
Nominal voltage [V]	380/400/415 Vac Three-Phase plus neutral		
Nominal frequency [Hz]	50 or 60		
Voltage stability [%]	± 0,5		
Dynamic stability	EN62040-3 class performance 1 distorting load		
OVERALL SPECIFICATION			
Power Module nominal power [kW] (Named PM)	42		
Output power factor [pf]	1		
Eco Mode Efficiency	Up to 99%		
Cabinet type	**Power Cabinet**	**Combo Cabinet**	**Battery Cabinet**
Nominal Power [kW]	294	126	N.A.
Parallelable (up to)	4	4	N.A.
Cabinet lay out description	7 x PM[3]	3 x PM[3] 5 x Battery shelves	9 x Battery shelves
Dimensions [WxDxH]	600x1050x2000	600x1050x2000	600x1050x2000
Weight [kg] (without PM[3]/BU[4])	320	360	280
System Noise Level at 1 m [dBA±2] (Smart Active)	< 68	<65	N.A.
Cabinet IP rating	IP20 finger proof (either with cabinet doors open or closed)		
Cable input	Rear side either top or bottom		
Color	RAL 9005		
Standards	Safety: IEC EN62040-1 EMC: IEC EN 62040-2-category C2		
Moving cabinet types UPS	Castors (any cabinet type is shipped without PM and BU)		

[1] *Including Redundancy*
[2] *Contitions applied*
[3] *PM = Power Module (42 kW)*
[4] *BU = Battery Unit*

NOTE: All performances quoted in a single row refer to any UPS system configuration from one to seven modules running in parallel unless specified differently.

The information in this document is subject to change without notice. Riello UPS assumes no responsibility for any errors that may appear in this document.

DATMPWM3P15CREN

Follow us on Social Networks

RPS SpA - Riello Power Solutions - ***Member of the Riello Elettronica Group***
Viale Europa, 7 - 37045 Legnago (Verona) - ITALY
Tel: +39 0442 635811 - Fax: +39 0442 629098
www.riello-ups.com
riello@riello-ups.com