



POWER SUPPLY  
PROTECTION IN  
**ONBOARD** SECURITY  
**SYSTEMS**

RIELLO ELETTRONICA

 **riello ups**





## The Power Of A Large Group At Your Service

Riello UPS, a Riello Elettronica Group brand, is a leading Italian manufacturer of uninterruptible power supplies (UPS) for civil and industrial applications. The company is one of the world's top five in technological research, production, sales and support, and offers the shipbuilding industry a rich array of experience, research and development, advanced production equipment and highly qualified technical staff.

**Riello UPS is a trusted technology partner that guarantees high quality standards by relying on cutting-edge, efficient production processes, all designed, implemented and monitored in accordance with the highest international standards.**



Targeting international markets through in-situ companies which provide an extremely high level of qualified service in every region has allowed RIELLO UPS to build up a presence throughout Europe, the United States, the United Arab Emirates, China, India, Singapore, Vietnam and Australia. From IT to industry, from merchant and passenger shipping applications to hospitals and the metro systems of major cities, Riello UPS is there, with the quality of its products and the reliability of its services.





## Design

Riello UPS has wide experience and an impressive body of technical expertise gained from resolving a variety of challenges for its customers with bespoke solutions designed to meet specific needs. This know-how enables Riello UPS to manufacture uninterruptible power supplies to high technological and efficiency standards, along with a range of integrated solutions tailored to the customer's needs.

The design office is the first point of contact for Riello UPS customers. Our highly-skilled and motivated technicians work with you to gather all the necessary data to implement tailored solutions to meet any kind of request.

Analysing customers' problems and facing market challenges head-on with the sole purpose of effecting improvements while constantly searching for new solutions is a daily commitment for Riello UPS. This approach ensures our customers can rely on cutting-edge products and solutions.

# Production

Each device is developed and manufactured entirely at the Riello UPS plant in Cormano (MI), which occupies an area of more than 11,000 m<sup>2</sup>, about 9,000 of which are indoor or enclosed.

The production cycle is constantly monitored by specialised personnel operating in full compliance with ISO 9001 standards.

The customer can easily check the production progress of the equipment and interact with technical staff to arrange changes and adaptations at any time.



# Control and Quality

A single contact person for each project means that the customer can always get an answer to their queries. A Riello UPS project manager monitors the entire product journey, from design and construction, through to testing, installation and commissioning. The customer is always present during testing. The accuracy and consistency of the procedures described in the quality manual are verified by inspections and guaranteed by the quality certification issued by Det Norske Veritas in accordance with ISO 9001 standards.

The company's quality system covers design, manufacture, sales and after-sales support.





# A unique service

## SUPPORT ANYWHERE

Riello UPS supports its customers well beyond commissioning through an efficient Support Centre available worldwide 24/7. This provides the customer with an immediate solution, including preventive measures, for any issues that arise during the lifespan of every device.

Nothing is left to chance in the diagnostics and remote management of UPS.

The daily activities of Riello UPS's research and development centres guarantee that its monitoring software and hardware are constantly updated. In this way the continuous monitoring of systems allows the scheduling of maintenance and the prevention of possible faults, thus protecting the customer's investment.





# Powered Loads Onboard Ships



- Marine automation
- Dynamic Positioning System
- Azipod propulsion control
- Satellite communications
- Internal cable TV
- Emergency public announcements
- Waterproof doors
- Energy distribution, filtering system
- Control/monitoring system
- IT systems
- Emergency lights
- Voyage Data Recorder
- Navigation equipment
- Radio and telecommunications



# References

## **PRINCESS CRUISE LINE**

Sun Princess  
Dawn Princess  
Sea Princess  
Grand Princess  
Ocean Princess  
Golden Princess  
Star Princess  
Caribbean Princess  
Crown Princess  
Emerald Princess  
Royal Princess  
Regal Princess  
Sky Princess

## **CARNIVAL CRUISE LINE**

Sunshine  
Triumph  
Victory  
Glory  
Conquest  
Valor  
Liberty  
Freedom  
Splendor  
Dream  
Magic  
Breeze  
Vista  
Horizon  
Panorama

## **HOLLAND AMERICA LINE**

Zuiderdam  
Ooesterdam  
Westerdam  
Noordam  
Eurodam  
Nieuw Amsterdam  
Koningsdam  
Nieuw Statendam

## **COSTA CROCIERE**

Fortuna  
Magica  
Serena  
Pacifica  
Deliziosa  
Favolosa  
Fascinosa  
Diadema  
P&O  
Pride of Rotterdam  
Pride of Hull  
Arcadia  
Ventura  
Azura

## **CHANTIER DE PONANT**

Le Boreal  
L'Austral  
Le Soleal  
Le Lyrial

## **DISNEY CRUISE LINE**

Magic  
Wonder

## **REGENT**

Seven Seas Explorer  
Seven Seas Splendor

## **MSC**

Seaside  
Seaview

## **SOC. DE TRAVERSE DU QUEBEC**

F.A.Gauthier





# Technical Features Of Power Supply Systems For The Shipping Sector

## CABINETS

- Certifications: RINA, Lloyd's;
- IP rating: IP 55, with ventilation openings IP 23;
- Ventilation: forced from the front panel;
- Cable entry/exit: from above/from below, from the side;
- Cabinet structure: in compliance with marine anti-vibration regulations;
- Accessibility: total from the front – all maintenance operations can be performed from the front panel;
- Handling: cabinets provided with eyebolts and supporting feet that facilitate handling from above and from below by pallet trucks.



## SYSTEM

- Input: double power supply with moulded case circuit breakers with high breaking capacity, highly sophisticated control logic for management of penetration times between the two lines;
- Output: alternating single/three-phase 230V, continuous 24/48/110 220V dc, with moulded case and modular integrated distribution with vertical selectivity;
- Certification: in our test room by inspectors of shipping registers;
- Interface: local display panel control/status display. Remote via communication cards for alarm signalling via voltage-free contacts or via software for the most commonly used systems.



## UPS

- Double conversion, low input current distortion;
- Complete insulation - input, output and battery;
- Parallelables: up to 8 units;
- Power range - 10÷70kVA pf 1, 3/1 phase (single unit);
- Power range - 15÷330kVA pf 1, 3/3 phase (single unit);
- Control logic cards: tropicalised;
- Flame retardant and low smoke emission cables;
- Magnetic parts: insulation class H, operation class B/F;
- Operating temperature: -10/+45°C.

## BATTERIES

- Cabinets: batteries set on containment trays treated with anti-acid paint;
- Protection: circuit breaker with trip indicator;
- Charging voltage: controlled by the control logic also based on working temperature (cabinet fitted with thermal probe);
- Battery type: sealed lead-acid, life 10-12 years, UL 94-V0.



# Main Conf

## UPS

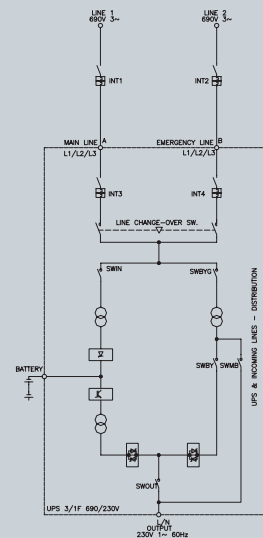
Input » double power supply with automatic change over, three phase 690V. ac. 60Hz.

Output » single phase 230V. ac. 60Hz.



## TYPE

# A



## UPS

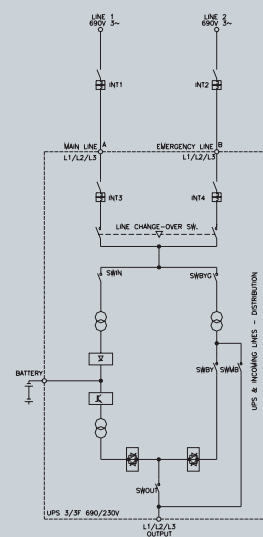
Input » double power supply with automatic change over, three phase 690V. ac. 60Hz.

Output » three phase 220V. ac. 60Hz.



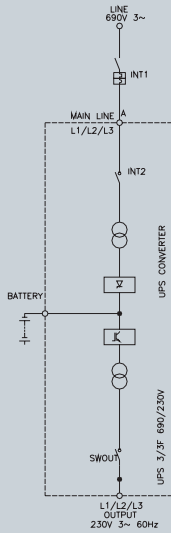
## TYPE

# B



# Configurations

## TYPE C



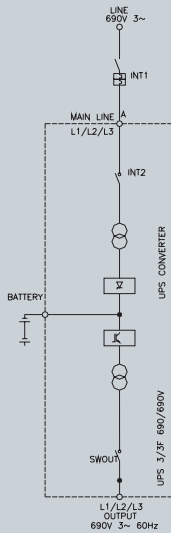
### UPS

Input » three phase 690V. ac. 60Hz.

Output » three phase 230V. ac. 60Hz.



## TYPE D



### UPS

Input » three phase 690V. ac. 60Hz.

Output » three phase 690V. ac. 60Hz.

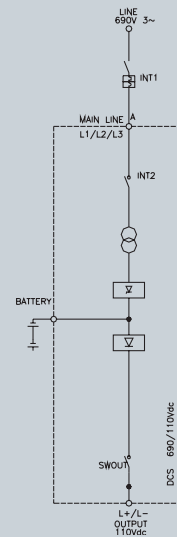


## TYPE

### RECTIFIER

Input » three phase 690V. ac. 60Hz.

Output » 110V. dc.



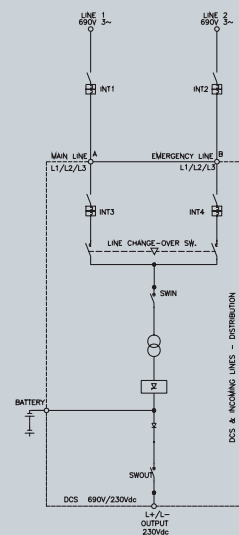
### RECTIFIER

Input » double power supply with automatic change over, three phase 690V. ac. 60Hz.

Output » 230V.dc.



## TYPE



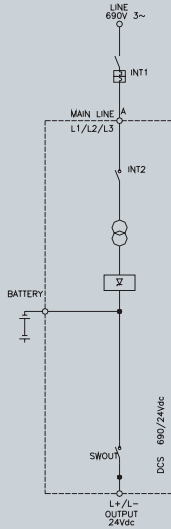


# TYPE G

## RECTIFIER

Input » Input - three phase 690V. ac. 60Hz.

Output » 24V. dc.

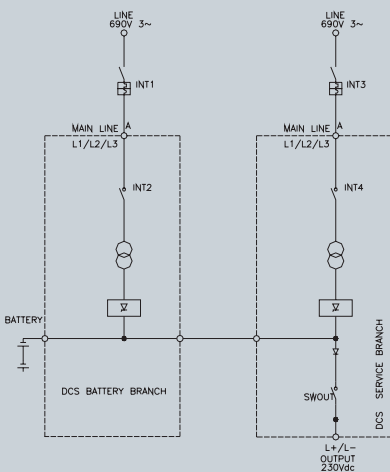


# TYPE H

## RECTIFIER DOUBLE BRANCH

Input » three phase 690V. ac. 60Hz.

Output » 230V. dc.



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