

## POWER SUPPLIES EQUIPMENT AND SYSTEMS



DC/DC CONVERTER DC/AC INVERTERS AC/DC UPS AC/AC VARIABLE FREQUENCY DRIVES AC/DC RECTIFIER SYSTEMS CUSTOM MADE SOLUTIONS





**#SHAPINGTHEFUTURE** 

Premiun PSU 6 7 **Our Quality** Environmental Commitment **Our Markets** 8 **Our Facilities** 10 **Our Solutions** 14 19 **Product Catalogue** 

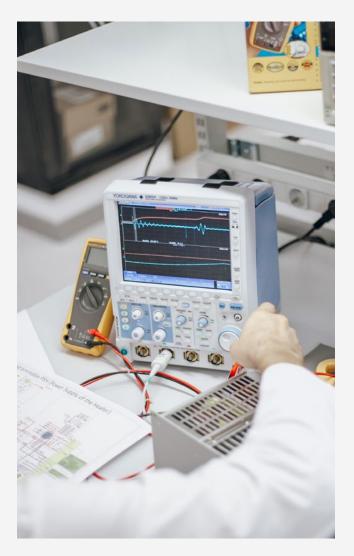
# **#SHAPINGT**

# REVOLUT ENE CONVERSIO SINCE

# HEFUTURE

# IONIZING RGY NSYSTEMS 1981

Over 40 years, at Premium PSU we have worked towards transforming our goals into achievements, our team's talent into revolutionary ideas and our values into commitments. As a result, in this catalogue we gather our range of DC/DC converters, DC/AC inverters, uninterrupted power supplies (UPS), AC/AC Variable Frequency Drives and AC/DC high efficiency rectifier systems, as well as high reliability custom-made solutions (from 50W to 72kW).



## SHAPING THE POWER OF THE FUTURE

All phases of our projects are carried out in Barcelona and guarantee the highest quality, from the design to the homologation, through manufacturing. Thanks to the most advanced testing systems, we can ensure the compliance with the necessary specifications and standards that enable the use of our products in various markets, such as industrial, railway, energy or in defense applications.

Over four decades of experience creating standard products and more than 900 custom-made designs have resulted in a unique know-how that transforms into solutions of reduced costs and delivery times.

## OUR QUALITY & ENVIRONMENTAL COMMITMENT

## 150 9001

All Premium PSU's processes are in compliance with the ISO 9001 regulation, which lays the groundwork of our day to day processes. These quality standards are always subject to inspection and improvement, keeping quality and security at pace of innovation and talent integration.

## ISO 14001

Our quality commitment intends to boost sustainability. In 2019 we incorporated an environmental management system based in the UNE-EN ISO 14001 regulation. At Premium PSU we believe that achieving good environmental practices speaks about our responsibility as a global company, where we have to consciously contribute to our environment's protection.

## CONFLICT MINERALS POLICY, ROHS DIRECTIVE AND REACH REGULATION

All our products comply with the Conflict Minerals Policy, RoHs Directive and REACH Regulation. Thanks to these regulations, we can assure that the materials used in our energy conversion solutions have not posed a social and/or sanitary risk in the manufacturing process.

# **OUR MARKETS**

## **HIGH - TECH INDUSTRY**

#### boost the digitalization and the progress toward the continuous industry

Innovation at the service of reliable power systems

revolution. During 40 years, at Premium PSU we have offered the most pioneering technology, while evolving and keeping our quality standards high. Our solutions can be found in applications such as high-tech compressors, AGVs, coating machinery and semiconductor lithography machines among others. Our experience leads us to stay up to date with market trends and over 900 custom designs endorse our adaptive capability at all levels and specifications.

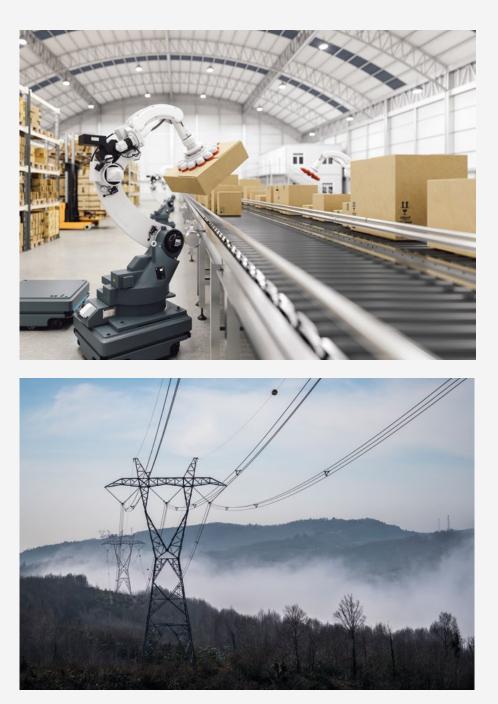
Developing reliable power conversion solutions is key to withstand and

## **RAILWAY AND** TRANSPORTATION

#### **Taking us far since 1981**

Efficiency, quality and reliability are merged in our railway solutions. In a demanding sector in terms of results and safety, our range of specific converters, inverters and power supplies for railway application stands out in performance and robustness. Our solutions can be found in vehicles such as trams, light rails, subways, locomotives, or on-board equipment from all over the world and in applications like HVAC systems, auxiliary and emergency systems, propulsion systems or low battery starters, among others. All our products comply with the EN50155 and EN45545 standards. Our know-how broadens our design possibilities, without sacrificing development cost and time to market.





### **ENERGY**

#### 40 years providing power to essential loads

Our mission at Premium PSU has always been transforming in terms of solutions' functionality, but also researching innovative ideas that allow us to make a difference. In the energy market, we are involved in projects related to high and medium voltage substations, smart grid applications and hydrogen fuel cells. Our partnership with the largest energy distributors and power generation market leaders, has allowed us to learn, grow and evolve with new technologies and communication protocols.

## EXTREME ENVIROMENTS

#### **Rising up to new challenges**

Setting limits is not our style, and that is why for over 40 years our energy conversion systems have played the main role in constant optimization. The results of our solutions in extreme environments speak for themselves about our quality and efficiency.

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# **OUR FACILITIES**

BORN IN BARCELONA, POWERING THE WORLD

Our facilities are a continuation of Premium PSU's innovative spirit and have been growing and evolving at the same time as our experience and knowledge. The quality of Premium PSU's solutions is the result of a strong investment in technological improvement and in the development of unique production techniques. With over 3.000 sqm (32.000sqf), we currently have the optimal facilities to provide the best version of our power conversion solutions.



## **R&D DEPARTMENT**

From the moment an idea is proposed until the solution materializes, we make sure that the product fulfills its needs during the foreseen life period. It all starts in Premium PSU's brain: our R&D department, where a team of the best engineers starts designing the products according to specifications.

During the design process, our team is in constant contact with the customer in order to use all its experience to increase the customer's competitiveness to its fullest, while implementing state of the art technologies in order to reduce energy consumption and reducing environmental impact. Our R&D department also makes sure all prototypes are verified and put through numerous simulations and tests before industrializing the product.

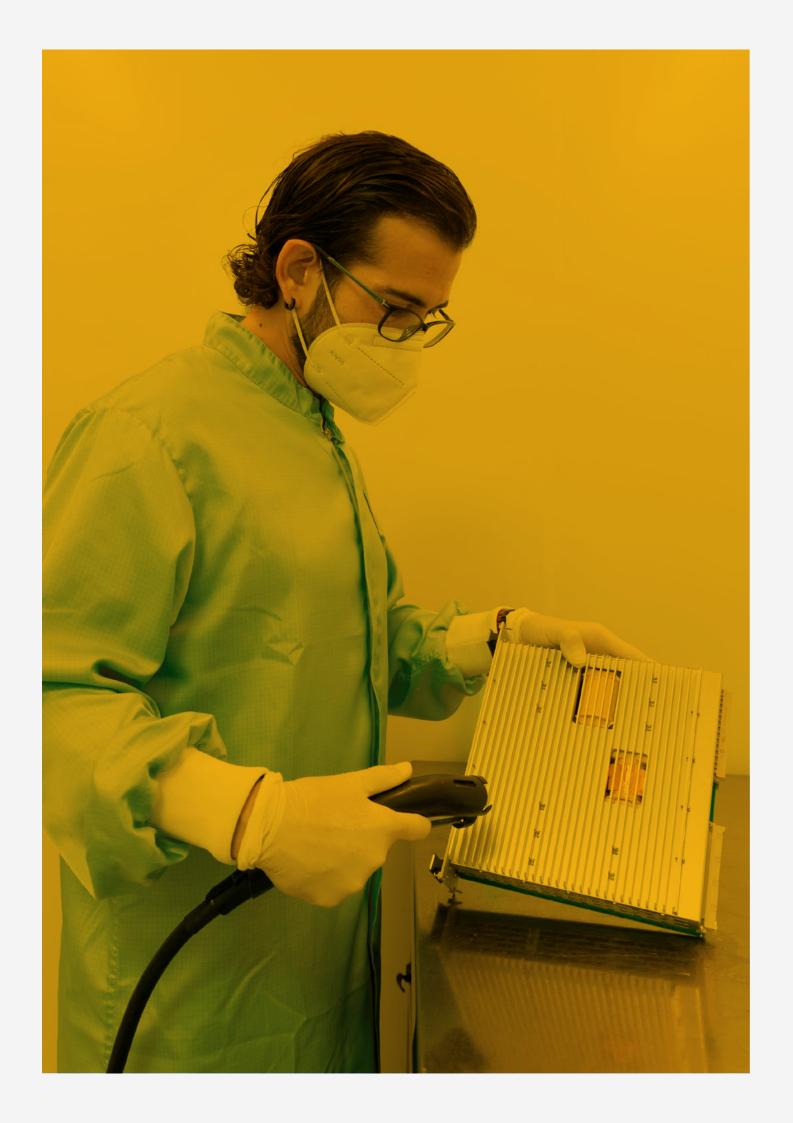


## **R&D TESTING LAB**

Most of the testing can be carried out in our facilities and with our own state of the art equipment:

- Semi-anechoic chamber for EMC both in emission and immunity
- Climatic chamber for temperature, damp heat, and accelerated aging tests
- Insulation resistance and dielectric strength up to 15kV for electrical safety directives
- Complete range of AC & DC sources and electronic loads
- At Premium PSU we continually strive to achieve the necessary means to elevate our results and exceed our costumers' expectations.





## **PRODUCTION AREA**

Premium PSU's production area is within an antistatic circuit that includes not only the reception of raw material, packaging and shipping areas, but also the entire production, assembly and verification chain. Due to this concentration of work phases in the same area, our industrialization process is considerably short. In addition, by introducing automated processes, human errors are minimized and our efficiency increases significantly.

One of our latest additions to our facilities is a clean room, which aims to meet the most demanding needs of our customers. Our clean room is ISO 14644 certified and complies with the highest security and quality guarantees. Regarding its functionality, this equipment allows us to optimize the cleaning process for products intended to be used in controlled environments. Premium PSU's clean room includes 3 independent spaces with different cleaning degrees: ISO8, ISO7 and ISO6.

We also have automatic verification equipment to guarantee the correct functioning of the products before being stored and shipped. All our products spend several hours in a burn-in room under controlled temperature conditions and a verification test report that includes the most representative results is available for all units sent out from our website.

Our facilities are not only crucial in the manufacturing of current products, but also in the establishment of new goals in order to keep revolutionizing high level power electronics.









## **OUR SOLUTIONS**



Our ideas are developed from start to finish in Barcelona to be used all over the world. Our designs come true in the form of DC/DC converters, DC/AC inverters, AC/DC UPS & battery chargers, AC/AC VFD and AC/DC rectifier systems from 50W to 72kW. The best of our products is that they give an answer to real needs. In case that the project demands a solution that does not exist as a standard product, at Premium PSU we customize it with all the quality and safety guarantees. We offer a 3-year warranty in industrial standard products and a 5-year warranty in railway products.

At Premium PSU we supervise our products with extreme care in all phases, from their design to their final shipment. We start with the premise of adapting our products to our customers, not the other way around. Thus, we adjust our product's features in terms of security and quality tests for its correct development.

From the production department, product performance tests are carried out through automatic verification equipment. In addition, either through internal or external laboratories, we can make electrical and functional tests, climatic tests and electromagnetic compatibility tests according to each project's needs. Once finished, 100% of our products spend several hours in a burn-in room under controlled temperature conditions. These intensive tests are what make a difference in our solutions, positioning us as technological leaders in our field.

## OUR CUSTOM MADE SOLUTIONS

There are times when finding the perfect standard solutions is nearly impossible. At Premium PSU, we believe in pushing the limits and because of that we follow this principle: if we can imagine it, we can design it. Our custom-made solutions are our main commitment at Premium PSU. We design from scratch, based in over 900 previous designs, and make modifications to standard products to meet the needs of any project's specification.

Going for a custom-made product from Premium PSU is an ideal solution for several reasons:



Performance and reliability: at Premium PSU we maximize the efficiency when faced with any power electronics challenge.



Time: the development phase for a custommade solution can go anywhere from 3 weeks to 6 months, being 25% faster than our competitors.



Price: we set a budget without unexpected fluctuations.



Flexibility: our custom-made solutions can evolve and allow continuous improvement after being placed on the market.

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Differentiation: a custom-made solution rises our customers' added value, which contributes to the positioning of their product ahead from their competitors.



Security: we guarantee the quality and safety of our products by making sure they comply with the needed regulations.

## AT PREMIUM PSU, CUSTOM IS OUR STANDARD

Premium PSU's customization is a 360° process: we design, test, validate and manufacture all of our solutions in our facilities in Barcelona with our team of over 50 engineers. **We assist our customers throughout all the customization process and offer technical advice based in our unique know-how to make the solution excellent**. Not in vain, our experience of over 40 years and a dream R&D Team have made us technological leaders in energy solutions. At Premium PSU we develop custom-made DC/DC converters, DC/AC inverters, AC/DC power supplies, AC/DC battery chargers and rectifiers, bidirectional converters, AC/DC high efficiency rectifier systems and AC/AC frequency converters. We can develop limitless solutions. Some of the most common technical capabilities we work based on are:

#### VERY HIGH-POWER DENSITY & HIGH FREQUENCY: FROM 50W TO 72kW

INPUT VOLTAGES UP TO 460VAC (1-3PH) AND 1500VDC (4,5KV PK)

**EFFICIENCIES UP TO 95%** 

**UP TO IP68 PROTECTION** 

15kV ISOLATION (SURGES OF ±20KV 1,2/50 MS)

#### COMMUNICATION AND ALARM PROTOCOLS BASED ON EACH PROJECT NEEDS

OUTPUT VOLTAGES UP TO 480VAC (1-3PH) AND 750VDC

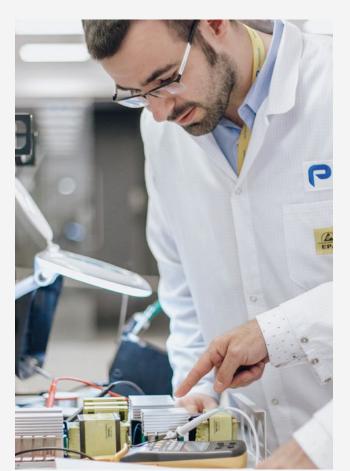
MULTIPLE AND WIDE INPUT AND OUTPUT VOLTAGES

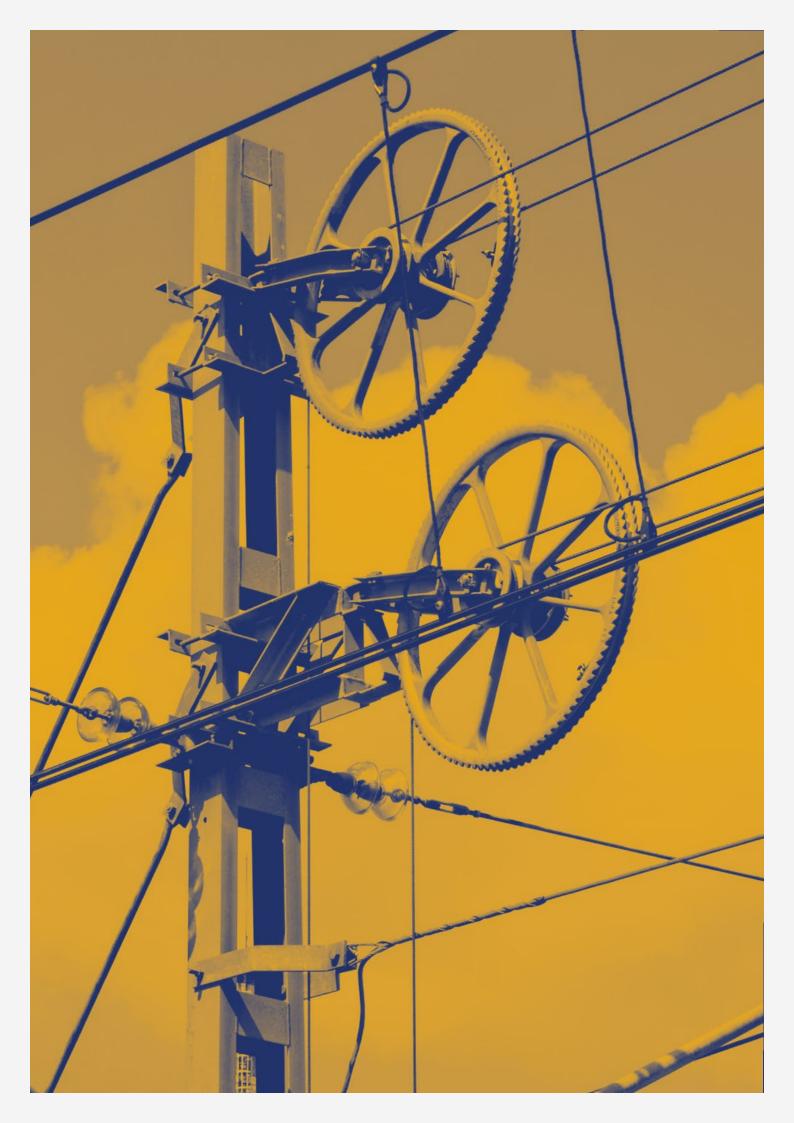
WIDE OPERATING TEMPERATURE: FROM -40°C TO +85°C

In order to give the best in our solutions, the most common items we usually work on are:

- Design: mechanic and PCB
- Ripples and specific noises
- High efficiencies
- Design personalization according to client requirements in terms of regulations and market standards (EMC, MIL-STD, DEF-STAN, UL, CE, UKCA, CSA CB, DNV...)
- RAMS analysis and SIL approval
- Software driven functionalities
- Specific systems testing
- Innovation from design to industrialization

Without any doubt, **custom-made solutions are what sets us apart** and allow us to go further.





## PRODUCT CATALOGUE

**DC/DC CONVERTERS** 

**DC/AC INVERTERS** 

AC/DC UPS

AC/AC VFD

AC/DC MODULAR SIC RECTIFIER SYSTEM

**CUSTOM MADE SOLUTIONS** 

## DC/DC CONVERTERS

High efficiency and high reliability in a compact size
Power range from 50W to 10kW
Wide variety of input/output combinations
Series specifically designed according EN50155, EN45455, and EN61373
Temperature range from -40°C to +85°C (OT6 class)
Easy install options

## CRS-120 100 - 140W DC/DC CONVERTERS





Power [W] 100 - 140 Input Voltage Range [V] 9 - 275 Output Voltage Range [V] 4.5 - 55.2 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 160 x 38,5



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### **Key Features**

MTBF >1Mh @ 40°C Extreme reliability Easy install: wall mount, DIN rail, rack mount

	12 Vin 9V 15V	24 Vin 18V 30V	48 Vin 36V 72V	72 Vin 50.4V 90V	110 Vin 77V 144V	220 Vin 165V 275V
5Vout	CRS-120-6761	CRS-120-6765	CRS-120-6769	CRS-120-6773	CRS-120-6777	CRS-120-6781
	100W	100W	100W	100W	100W	100W
12Vout	CRS-120-6762	CRS-120-6766	CRS-120-6770	CRS-120-6774	CRS-120-6778	CRS-120-6782
	100W	120W	120W	120W	120W	120W
24Vout	CRS-120-6763	CRS-120-6767	CRS-120-6771	CRS-120-6775	CRS-120-6779	CRS-120-6783
	120W	120W	140W	140W	140W	140W
48Vout	CRS-120-6764	CRS-120-6768	CRS-120-6772	CRS-120-6776	CRS-120-6780	CRS-120-6784
	120W	120W	140W	140W	140W	140W

## **CTS-120**

### RAILWAY 100 -140W DC/DC CONVERTERS





Power [W] 100 - 140 Input Voltage Range [V] 14.4 - 144 Output Voltage Range [V] 4.5 - 55.2 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 160 x 38,5



Key Features MTBF >1Mh @ 40°C Extreme reliability Easy install: wall mount, DIN rail, rack mount

	24 Vin 14.4V 30V	36 Vin 21.6V 47V	48 Vin 28.8V 60V	72 Vin 43.2V 90V	110 Vin 66V 144V
5Vout	CTS-120-6865	CTS-120-6885	CTS-120-6869	CTS-120-6873	CTS-120-6877
	100W	100W	100W	100W	100W
12Vout	CTS-120-6866	CTS-120-6886	CTS-120-6870	CTS-120-6874	CTS-120-6878
	120W	120W	120W	120W	120W
24Vout	CTS-120-6867	CTS-120-6887	CTS-120-6871	CTS-120-6875	CTS-120-6879
	120W	140W	140W	140W	140W
48Vout	CTS-120-6868	CTS-120-6888	CTS-120-6872	CTS-120-6876	CTS-120-6880
	120W	140W	140W	140W	140W





Power [W] 120 Input Voltage Range [V] 14.4 - 154 Output Voltage Range [V] 10.8 - 69.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 160 x 40



#### **Key Features**

Ultra wide input range Efficiency up to 91% Easy install: wall mount, DIN rail, rack mount

## NEW

CLS-120	Universal Railway Input 14.4V 154V
12Vout	CLS-120-6512 120W
24Vout	CLS-120-6513 120W
48Vout	CLS-120-6514 120W

## CRS-240 180 - 280W DC/DC CONVERTERS



Power [W] 180 - 280 Input Voltage Range [V] 9 - 275 Output Voltage Range [V] 4.5 - 55.2 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 200 x 38,5

#### **Key Features**

MTBF >1Mh @ 40°C Extreme reliability Easy install: wall mount, DIN rail, rack mount





CRS-240-6351 CRS-240-6355 CRS-240-6359 CRS-240-6363 CRS-240-6367 CRS-240-6371 5Vout 180W 180W 180W 180W 180W 180W CRS-240-6352 CRS-240-6356 CRS-240-6360 CRS-240-6364 CRS-240-6368 CRS-240-6372 12Vout 180W 240W 240W 240W 240W 240W CRS-240-6353 CRS-240-6357 CRS-240-6361 CRS-240-6365 CRS-240-6369 CRS-240-6373 24Vout 200W 240W 280W 280W 280W 280W CRS-240-6354 CRS-240-6358 CRS-240-6362 CRS-240-6366 CRS-240-6370 CRS-240-6374 48Vout 200W 240W 280W 280W 280W 280W

## CTS-240 RAILWAY 180 - 240W DC/DC CONVERTERS



Power [W] 180 - 280 Input Voltage Range [V] 14.4 - 275 Output Voltage Range [V] 4.5 - 55.2 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 220 x 38,5



### **Key Features**

MTBF >1Mh @ 40°C Extreme reliability Easy install: wall mount, DIN rail, rack mount

	24 Vin 14,4V 30V	36 Vin 21,6V 47V	48 Vin 28,8V 60V	72 Vin 43,2V 90V	110 Vin 66V 144V	220 Vin 132V 275V
5Vout	CTS-240-6655 180W	CTS-240-6672 180W	CTS-240-6659 180W	CTS-240-6663 180W	CTS-240-6667 180W	Available under request
12Vout	CTS-240-6656 240W	CTS-240-6673 240W	CTS-240-6660 240W	CTS-240-6664 240W	CTS-240-6668 240W	Available under request
24Vout	CTS-240-6657 240W	CTS-240-6674 280W	CTS-240-6661 280W	CTS-240-6665 280W	CTS-240-6669 280W	CTS-240-6678 280W
48Vout	CTS-240-6658 240W	CTS-240-6675 280W	CTS-240-6662 280W	CTS-240-6671 280W	CTS-240-6670 280W	Available under request

## CKR-2000 1960W REDUNDANT DC/DC CONVERTERS





ATLWAY EN50155



**Key Features** 

Configurable input and output redundancy Railway version available

		B - Sub-rack	B - Sub-rack		s / Modules
		Total power	Redun. N+1	48 Vin (36V + 60V)	110 Vin (77V + 144V)
12Vout	NP-9176	1920W	1680W	NP-9179 240W	NP-9182 280W
24Vout	NP-9177	2240W	1960W	NP-9180 280W	NP-9183 280W
48Vout	NP-9178	2240W	1960W	NP-9181 280W	NP-9184 280W







Power [W] 500 Input Voltage Range [V] 14.4 - 144 Output Voltage Range [V] 21.6 - 55.2 Cooling: Natural convection Dimensions [LxWxH in mm]: 266 x 180 x 54,8



#### **Key Features**

Extreme reliability Oring FET Current sharing & hold-up time options Railway version available

	24Vin 14.4V 30V	36 Vin 21.6V 47V	48Vin 28.8V 60V	72Vin 43.2V 90V	110Vin 66V 144V
24Vout	CRS-500-6455	CRS-500-6467	CRS-500-6458	CRS-500-6461	CRS-500-6464
	500W	500W	500W	500W	500W
48Vout	CRS-500-6456	CRS-500-6468	CRS-500-6459	CRS-500-6462	CRS-500-6465
	500W	500W	500W	500W	500W
110Vout	CRS-500-6457	Available under	Available under	Available under	CRS-500-6466
	500W	request	request	request	500W

## CRS-1000 1000W DC/DC CONVERTERS





Power [W] 1000 Input Voltage Range [V] 14.4 - 144 Output Voltage Range [V] 21.6 - 126.4 Cooling: Natural convection, Conduction, Internal forced air Dimensions [LxWxH in mm]: 266 x 180 x 54,8



Extreme reliability Oring FET Current sharing & hold-up time options Railway version available

	24 Vin 14.4V 30V	36 Vin 21.6V 47V	48 Vin 28.8V 60V	72 Vin 43.2V 90V	110 Vin 66V 144V
24Vout	CRS-1000-6475 1000W	CRS-1000-6487 1000W	CRS-1000-6478 1000W	CRS-1000-6481 1000W	CRS-1000-6484 1000W
48Vout	CRS-1000-6476 1000W	CRS-1000-6488 1000W	CRS-1000-6479 1000W	CRS-1000-6482 1000W	CRS-1000-6485 1000W
72Vout	CRS-1000-6490 1000W	CRS-1000-6491 1000W	Available under request	Available under request	CRS-1000-6494 1000W
110Vout	CRS-1000-6492 1000W	Available under request	Available under request	Available under request	CRS-1000-6493 1000W

## CRS-2000 2000W DC/DC CONVERTERS





Power [W] 2000 Input Voltage Range [V] 14.4 - 154 Output Voltage Range [V] 21.6 - 126.5 Cooling: Internal forced air, natural convection Dimensions [LxWxH in mm]: 314,6 x 220 x 79



#### **Key Features**

SiC Technology: high power density Wide input/output range combinations

## NEW

	24Vin 16.8V 30V	36Vin 25.2V 45V	48Vin 33.6V 60V	72Vin 50.4V 90V	110Vin 77V 137.5V
	14.4V 33.6V (1)	21.6V 50.4V (1)	28.8V 67.2V (1)	43.2V 100.8V (1)	66V 154V (1)
24Vout	CRS-2000-6951	CRS-2000-6955	CRS-2000-6959	CRS-2000-6963	CRS-2000-6967
	2000W	2000W	2000W	2000W	2000W
48Vout	CRS-2000-6952	CRS-2000-6956	CRS-2000-6960	CRS-2000-6964	CRS-2000-6968
	2000W	2000W	2000W	2000W	2000W
72Vout	CRS-2000-6953 2000W	CRS-2000-6957 2000W	Available under request	Available under request	Available under request
110Vout	CRS-2000-6954 2000W	Available under request	Available under request	Available under request	CRS-2000-6970 2000W

Note: (1) Input voltage range for 100ms.

## **CVS-280** 280W DC/DC

NEW





Power [W] 280 Input Voltage Range [V] 400 - 1100 Output Voltage Range [V] 21.6 - 121 Cooling: Natural convection Dimensions [LxWxH in mm]: 65 x 162 x 230

#### **Key Features**

Parallelizable units by ORing Active catenary surges filter Input voltage according to EN50163:2006 and EN50124-2:2017









Power [W] 6000 average Input Voltage Range [V] 16.8 - 138 (14.4 - 154Vdc 0.1s) Output Voltage Range [V] 500 Cooling: Internal forced air Dimensions [LxWxH in mm]: 477,2 x 257,4 x 84,8

ORing diode at the output for decoupling from 2kW lines

500Vdc output (up to 700V under request)

SiC Technology: high power density

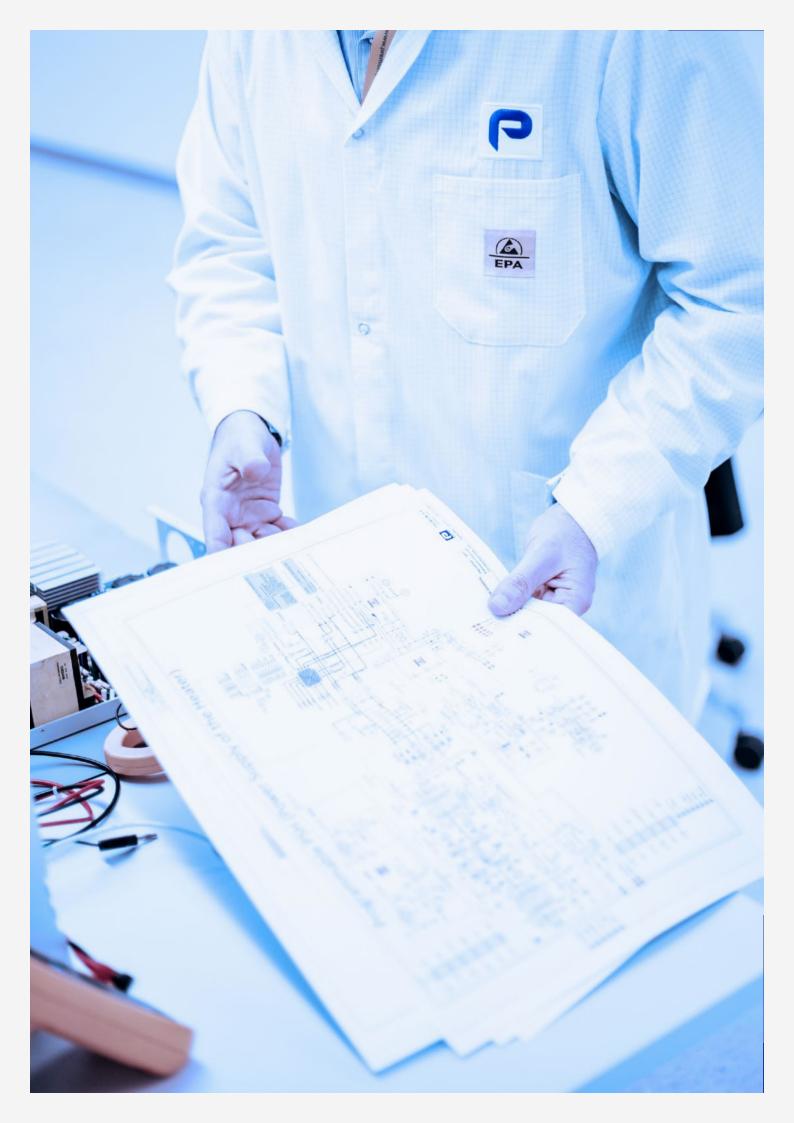


## NEW

	24 VDC 16.8 30 V	48 VDC 33.6 60 V	72 VDC 50.4 90 V	110 VDC 77 138 V
500 Vdc	CBS-10K-6001	CBS-10K-6003	CBS-10K-6004	CBS-10K-6005
	5200 Wpk	10000 Wpk	10000 Wpk	10000 Wpk
	Available under request	Available under request	Available under request	Coming Soon

**Key Features** 

Up to 10 kW during 40s



## DC/AC INVERTERS

Compact design, very high power density Sine wave output voltage Power range from 220V to 24kW Up to 94% efficiency In compliance with EN50155 and EN45545 Widest range in the market for railway applications

## OCS-260 INDUSTRIAL & RAILWAY 260VA DC/AC INVERTERS





Power [W] 180 - 220 Input Voltage Range [V] 9.5 - 138 Output Voltage Range [V] 144 - 241.5 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 220 x 40

#### **Key Features**

- Extreme reliability
- Sine wave output voltage
- Railway version available



	12Vdc	24Vdc	36Vdc	48Vdc	72Vdc	110Vdc
	9.5 15V (1)	16.8 30V	25.2 45V	33.6 60V	50.4 90V	77 138V
120Vac	OCS-260-7041	OCS-260-7043	OCS-260-7044	OCS-260-7045	OCS-260-7046	OCS-260-7047
	180W	200W	220W	220W	220W	220W
230Vac	OCS-260-7031	OCS-260-7033	OCS-260-7034	OCS-260-7035	OCS-260-7036	OCS-260-7037
	180W	200W	220W	220W	220W	220W

Note (1): Startup voltage ≤10.2V. Under-voltage shutdown ≤ 9.1V

## OPS-260 1PH IP66 260VA DC/AC INVERTER



Power [W] 180 - 220 Input Voltage Range [V] 9.5 - 138 Output Voltage Range [V] 114 - 241.5 Cooling: Natural convection Dimensions [LxWxH in mm]: 67 x 249 x 135



1ph

**Key Features** 

Extreme reliability Sine wave output voltage IP66

	12Vdc	24Vdc	36Vdc	48Vdc	72Vdc	110Vdc
	9.5 15V (1)	16.8 30V	25.2 45V	33.6 60V	50.4 90V	77 138V
120Vac	OPS-260-7741	OPS-260-7743	OPS-260-7744	OPS-260-7745	OPS-260-7746	OPS-260-7747
	180W	200W	220W	220W	220W	220W
230Vac	OPS-260-7731	OPS-260-7733	OPS-260-7734	OPS-260-7735	OPS-260-7736	OPS-260-7737
	180W	200W	220W	220W	220W	220W







Power [W] 450 - 750 Input Voltage Range [V] 9.5 - 138 Output Voltage Range [V] 110 - 230 Cooling: Internal forced air Dimensions [LxWxH in mm]: 130 x 270 x 50



1ph

#### **Key Features**

- High power density Sine wave output voltage
- Railway version available

	12Vdc	24Vdc	36Vdc	48Vdc	72Vdc	110Vdc
	9.5 15V	16.8 30V	25.2 45V	33.6 60V	50.4 90V	77 138V
120Vac	ODS-750-7281	ODS-750-7283	ODS-750-7284	ODS-750-7285	ODS-750-7286	ODS-750-7287
	450W	750W	750W	750W	750W	750W
230Vac	ODS-750-7271	ODS-750-7273	ODS-750-7274	ODS-750-7275	ODS-750-7276	ODS-750-277
	450W	750W	750W	750W	750W	750W

## **ODS-1500**

INDUSTRIAL & RAILWAY 1500VA DC/ AC INVERTERS





Power [W] 1200 - 1500 Input Voltage Range [V] 10 - 138 Output Voltage Range [V] 120 - 230 Cooling: Internal forced air Dimensions [LxWxH in mm]: 360,48 x 161,6 x 65,6



**Key Features** 

Very high power density Configurable power Sine wave output voltage Railway version available 1ph

	12Vdc	24Vdc	36Vdc	48Vdc	72Vdc	110Vdc
	10 15V	16.8 30V	25.2 45V	33.6 60V	50.4 90V	77 138V
120Vac	ODS-1500-7121	ODS-1500-7123	ODS-1500-7124	ODS-1500-7125	ODS-1500-7126	ODS-1500-7127
	1200W	1500W	1500W	1500W	1500W	1500W
230Vac	ODS-1500-7111	ODS-1500-7113	ODS-1500-7114	ODS-1500-7115	ODS-1500-7116	ODS-1500-7117
	1200W	1500W	1500W	1500W	1500W	1500W

## **ODS-3000 INDUSTRIAL & RAILWAY 3000VA DC/AC INVERTERS**





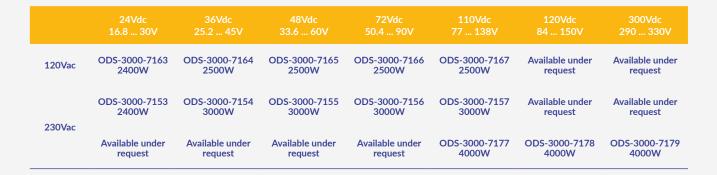
Power [W] 2400 - 4000 Input Voltage Range [V] 16.8 - 138 Output Voltage Range [V] 120 - 230 Cooling: Internal forced air Dimensions [LxWxH in mm]: 386,9 x 193,9 x 78,5

#### **Key Features**

Very high power density Configurable power Sine wave output voltage Railway version available



1ph



## **ODX-1300**

**3PH 1300VA DC/AC INVERTERS Under request** 





Power [W] 1100 Input Voltage Range [V] 16.8 - 138 Output Voltage Range [V] 250 - 400 Cooling: Internal forced air Dimensions [LxWxH in mm]: 315 x 178 x 66,5



#### **Key Features**

Very high power density Configurable power & soft start Sine wave output voltage Railway version available





	24Vdc	72Vdc	110Vdc
	16.8 30V	50.4 90V	77 138V
250Vac	ODX-1300-7442	ODX-1300-7445	ODX-1300-7447
	1100W	1100W	1100W
400Vac	ODX-1300-7452	ODX-1300-7455	ODX-1300-7457
	1100W	1100W	1100W

ODV	3000
	5000
3PH 3000V	A DC/AC INVERTERS





Power [W] 2400 - 3000 Input Voltage Range [V] 16.8 - 138 Output Voltage Range [V] 230 - 400 Cooling: Internal forced air Dimensions [LxWxH in mm]: 392,87 x 220 x 80,5

#### **Key Features**

Very high power density Configurable power & soft start Sine wave output voltage Railway version available





	24Vdc	36Vdc	48Vdc	72Vdc	110Vdc
	16.8 30V	25.2 45V	33.6 60V	50.4 90V	77 138V
230Vac	ODX-3000-7413	Available under	Available under	Available under	ODX-3000-7417
	2400W	request	request	request	3000W
400Vac	ODX-3000-7403	ODX-3000-7404	ODX-3000-7405	ODX-3000-7406	ODX-3000-7407
	2400W	3000W	3000W	3000W	3000W

## ODX-4500

3PH 4500VA DC/AC INVERTERS Under request





Power [W] 4000 Input Voltage Range [V] 50.4 - 138 Output Voltage Range [V] 50 - 400 Cooling: Internal forced air Dimensions [LxWxH in mm]: 392,87 x 220 x 80,5

#### **Key Features**

Very high power density Configurable power & soft start Railway version available Sine wave output voltage



3ph

	72Vdc	110Vdc	110Vdc
	50.4 90V	70 125V	77 138V
400Vac	ODX-4500-7425	ODX-4500-7426	ODX-4500-7427
	4000W	4000W	4000W

## **ODX-6000 3PH 6000VA DC/AC INVERTERS**





Power [W] 3500 - 6000 Input Voltage Range [V] 16.8 - 138 Output Voltage Range [V] 80 - 400 Cooling: Internal forced air Dimensions [LxWxH in mm]: 455,44 x 260 x 84,8

#### **Key Features**

Very high power density Sine wave output voltage **Railway version available** Up to 5 units in parallel Configurable power & soft start





	24Vdc	48Vdc	72Vdc	110Vdc
	16.8 30V	33.6 60V	50.4 90V	77 138V
400Vac	ODX-6000-7502	ODX-6000-7505	ODX-6000-7506	ODX-6000-7507
	3500W	6000W	6000W	6000W

## **OVX-6400** 6400VA 3PH CATENARY DC/AC INVERTER (600/750 VIN)





Power [W] 6400 Input Voltage Range [V] 400-1000 Output Voltage Range [V] 80 - 400 Cooling: Internal forced air Dimensions [LxWxH in mm]: 85,8 x 372 x 455,3



**KEY FEATURES** 

SiC Technology: high power density Active catenary surges filter Sine wave output voltage





Configurable power & soft start Input voltage according to EN50163:2006 and EN50124-2:2017

Input Voltage	Output Voltage	Output Power
400900 Vdc	400 V 3ph	6kW   6.4 KVA   8 kWpk

## COMPLEMENTARY SOLUTIONS FOR DC/AC INVERTERS

ACI-3000 INRUSH CURRENT LIMITER



NEW

#### **KEY FEATURES**

Suitable for DC/AC series: ODS-1500 ODS-3000 ODX-3000 Remote ON/OFF with low standby current Active polarity reversal protection According to EN-50155 and EN-45545



Suitable for series	24Vdc	36Vcd	48Vdc	72Vdc	110Vdc
ODS-1500 ODS-3000 ODX-3000	ACI-3000-9333	ACI-3000-9334	ACI-3000-9335	ACI-3000-9336	ACI-3000-9337

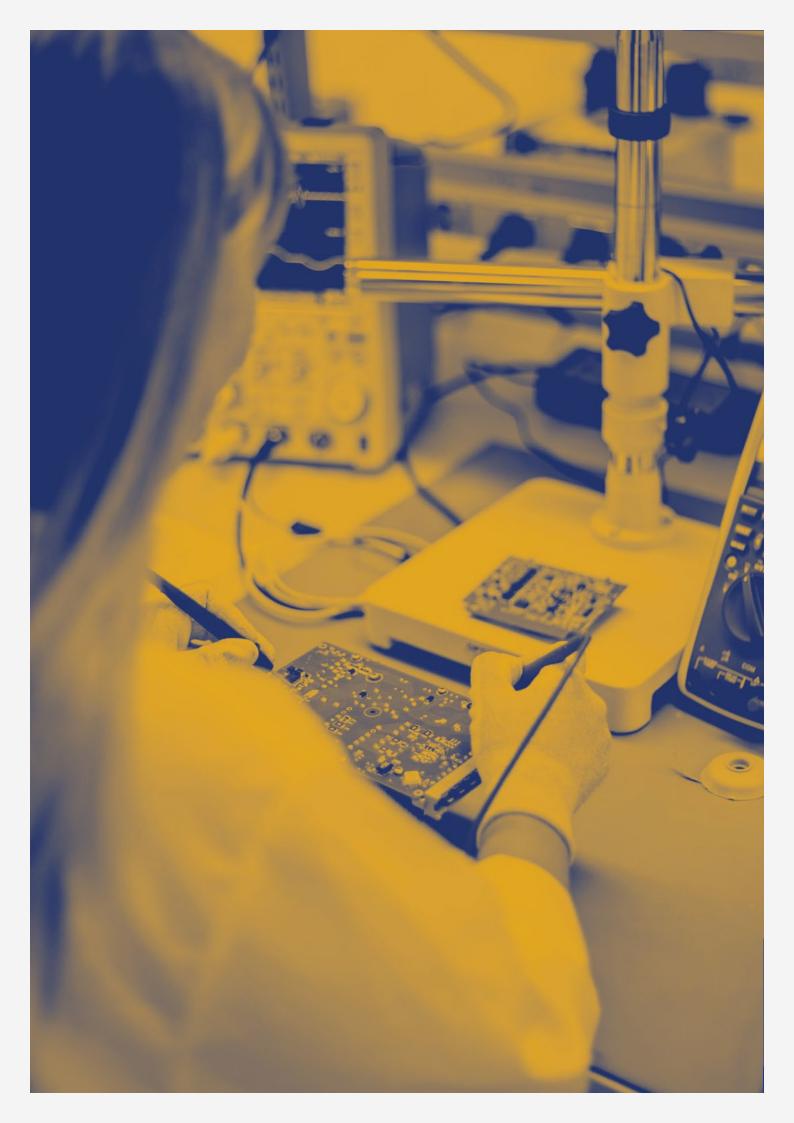


### **KEY FEATURES**

Suitable for DC/AC series: ODS-750, ODS-1500 and ODS-3000 Compatible with any 120/230V mains line 2ms high speed failure detection and transfer time Does not require a synchronised network



MODEL	ACB 3000-9431				ACB 3000 9576	
Voltage lines	230 Vac			120 Vac		
Suitable for inverters	ODS-750	ODS-1500	ODS-3000	ODS-750	ODS-1500	ODS-3000



## AC/AC VARIABLE FREQUENCY DRIVES

### IN COMPLIANCE WITH EN50155 AND EN45545 VFD FOR RAILWAY APPLICATIONS

### Capabilities for AC/AC VFD development

- Up to 40kW
- Isolated or non-isolated versions
- Sine wave output voltage
- Combinations as required: 1ph-3ph / 3ph-1ph / 3ph-3ph
- Ability to maintain stable output voltage over the entire input range
- Adjustable output frequency and voltage
- Communication through CAN BUS
- Rolling stock standards according to project needs

### Benefits of using an AC/AC Variable Frequency Drives:

- Save energy and improve network, systems, and HVAC efficiency
- Easy control of motor speed, flow and pressure in electric pumps and fans
- Soft start of motors
- Reduction of temperature and less maintenance of connected devices
- Match the speed and power of the drive to the process requirements

## #WEAREPREMIUMPSU







Power [W] 10.000W Input Voltage Range [V] 360-440 Output Voltage Range [V] 80-400 Cooling: Internal controlled fan Dimensions [LxWxH in mm]: 454,39 x 260,4 x 84,8

#### **Key Features**

Suitable for motors control Sine wave output voltage Adjustable output frequency &voltage Remote ON/OFF opto-coupled Alarm by isolated relay contacts Configurable input: Reverse or Mid power Remote control via RS232 or CAN Bus Railway according to EN50155 Fire and smoke: EN45545-2



3300 VA AC/AC FREQUENCY CONVERTER





Power [W] 3300W

Input Voltage Range [V] 360-528 Output Voltage Range [V] 230Vac Cooling: Internal forced air with fan speed control Dimensions [LxWxH in mm]: 434,7 x 245,4 x 84,8

#### **Key Features**

Suitable for socket AC power Designed according to EN50155 Fire and smoke: EN45545-2 High input-output isolation Remote start signal Output failure alarm Output short circuit protection Over temperature shutdown Inrush limit 94% efficiency



1ph

 $\infty$ 

3ph

# AC/DC UPS -BATTERY CHARGERS

Power from 100W to 500W Limitless communication possibilities SMART functionalities

**#WEAREPREMIUMPSU** 

## ECS-200 200W AC/DC UPS BATTERY CHARGER

Power [W] 200 - 230 Input Voltage Range [V] ±20% Output Voltage Range [V] 12 - 57.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 100 x 220 x 45

#### **Key Features**

High reliability Discharged battery cut off

ECS-200	Nominal Voltage	Maximum Rectifier Power	Maximum Rectifier Current	Maximum Battery Current	Battery Floating Voltage	Battery Cut off Voltage	Charging current selection 1	Charging current selection 2	Charging current selection 3	Charging current selection 4
ECS-200-5183	12V	200W	14.7A	20A	13.6V	10V	2.0A	2.4A	4.8A	9.6A
ECS-200-5187	24V	225W	8.30A	15A	27.2V	20V	1.0A	1.2A	2.4A	4.8A
ECS-200-5189	48V	230W	4.20A	6A	54.4V	40V	0.44A	0.6A	1.2A	2.4A

## EPS-120

#### 120W SMART UPS BATTERY CHARGER Under request





Power [W] 120 Input Voltage Range [V] 184 - 265 Output Voltage Range [V] 0 - 57.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 247 x 115 x 115

#### **Key Features**

Ethernet network controlled (Web services & SNMP) Battery test, temperature sensor, 10kV I/O isolation Especially designed for IoT applications

EPS-120	OUT-1	Total power	Peak power	Battery	Input isolation	Housing
EPS-120-5192	48V / 3A 4.6 Apk	120W	180W	48V	10000Vrms	Plastic case







## EPS-200 200W SMART UPS BATTERY CHARGER

**Under request** 





Power [W] 200 Input Voltage Range [V] 184 - 265 Output Voltage Range [V] 0 - 57.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 247 x 115 x 115

#### Key Features

Ethernet network controlled (Web services & SNMP) Battery test, temperature sensor, 10kV I/O isolation Especially designed for IoT applications

	OUT-1	Total power	Peak power	Battery	Input isolation	Housing
EPS-200-5193	48V / 5.2A 10.3 Apk	200W	400W	48V	10000Vrms	Plastic case

### EDT-150 150W 3 OUTPUTS SMART UPS BATTERY CHARGER





Power [W] 150 Input Voltage Range [V] 184 - 264 Output Voltage Range [V] 0 - 57.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 247 x 115 x 115

#### **Key Features**

Ethernet network controlled (Web services & SNMP) Battery test, temperature sensor, 10kV I/O isolation Especially designed for IoT applications

EDT-150	OUT-1	OUT-2	OUT-3	Total power	Peak power	Battery	Input isolation	Housing
EDT-150-5191	12V / 16A 25 Apk	48V / 2.2A 5.2 Apk	48V / 0.83A 0.83 Apk	150W	275W	12V	3000Vrms	Aluminium case

## EDS-500 500W DC UPS BATTERY CHARGER



Power [W] 500 Input Voltage Range [V] 90 - 264 Output Voltage Range [V] 0 - 57.6 Cooling: Natural convection Dimensions [LxWxH in mm]: 186.5 x 87 x 124.4



## NEW

EDS-500	Input Voltage	Nominal output voltage	Maximum output power	Maximum output current	Maximum output peak current from battery
EDS-500-5243	90 264 Vac	12V	500W	36.7A	50A 30s
EDS-500-5247	90 264 Vac	24V	500W	18.4A	30A 30s
EDS-500-5249	90 264 Vac	48V	500W	9.19A	15A 30s
EDS-500-5251	90 264 Vac	110V	500W	4A	6.5A 30s

Key Features Battery test

Temperature sensor CAN communication

# **FlexStorm Series: MODULAR SiC RECTIFIER SYSTEM**

**Battery autonomy end contactor** Output circuit breaker distribution **Voltage drop Diodes - Communications** Anti-reverse diode - IP grade - Cabinet color **Special documentation - Seismic grade protection** Other input voltages available **Output distribution with DC/DC Output inverter - Batteries** 













SiC Technology

## #WEAREPREMIUMPSU

#### Configurable cabinet: Up to 72kW 110/125Vout High Efficiency modular Rectifier





#### 3kW Parallelable single phase Rectifier Module





#### Environmental

Storage temperature	-40°C 85°C
Operating temperature range	-10°C 60°C 1
Cooling	Internal forced air controlled (modules)
Maximum Relative humidity	95% with no condensation
Installation height	up to 2000 m
MTBF	250.000h @ 25°C according to EN29500

#### Safety

Safety according to	EN62368-1:2020
Dielectric strength Input-Output	2000Vac, 50Hz, 1min.
Dielectric strength Input-Earth	4000Vac, 50Hz, 1min.
Dielectric strength Output-Earth	2000Vac, 50Hz, 1min.

#### **Dimensions**

FDS-3kW Rectifier Module	67mm x 130mm x 400mm
LMS Control Module	40 mm x 130mm x 400mm

## FlexStorm Series Communication and Control system



#### Control

Local control	RS-232
Remote control	Ethernet & SNMP
Alarm contacts	6 low voltage analog inputs 4 digital inputs
LEDs	Green: Vin-Vout OK, Yellow: Warning, Red: Alarm

#### Input

AC input voltage (nominal)	3 x 400 Vac + N
AC input voltage (range)	340460 Vac
AC input frequency (range)	45 65 Hz
Power factor	>0.94 (> 50% Load)
Efficiency	>89 % (> 25% Load)
	>93 % (> 100% Load)

#### Output

Output type	DC
Default output voltage	125Vdc
Output voltage adjustment	86 157 Vdc
Maximum output current	20480 A
Current sharing	Parallel Active
Battery type	NiCd & PbCa
Static voltage regulation	< ±1 % typical
Dynamic voltage regulation	< ±1 % (Δ 20%-100%-20% Load)
Response time	< 10 ms (Δ 20%-100%-20% Load)
Ripple (BW: 20mHz)	< 90 mVpp

#### EMC

Emission according to	EN 61000-6-4:2019
	EN 61000-3-2:2019
Cooling	EN-61000-6-2:2019

# CUSTOM-MADE SOLUTIONS

Not finding the perfect fit in a standard product catalogue? Tell us about your project and we will make it possible.

We have the best R&D to design the best power conversion systems:



More than 50 engineers working transversally Know-how acquired over four decades Innovative and limitless designs Involved in the entire process Technical assistance to all projects Over 900 successful industrialized solutions Committed to continuous improvement

#### SMART 125V/35A THYRISTOR RECTIFIER

SECURE DC POWER FOR MV/LV SUBSTATIONS

## **#WEAREPREMIUMPSU**

		45
2kW 3PH DC/AC INVERTER, PARALLELIZABLE UP TO 4 UNITS	3PH AC/DC POWER SUPPLY 15kW (60kW/PK)	UL DC/DC 70V900VIN 300W (800WPK)
RAILWAY INTEGRATED TRACK MANOEUVRING SYSTEM	MECHATRONICS	HIGH TECH OIL-FREE AIR CENTRIFUGAL BLOWER
400W DC/DC CONVERTER, 110VIN/290VOUT	IOT BATTERY CHARGER, DUAL OUTPUT, 200W (400W/PK)	2kW BATTERY CHARGER, >90% EFFICIENCY
RAILWAY EMERGENCY VENTILATION	SECURE DC POWER FOR MV/LV SUBSTATIONS	RAILWAY LEVEL CROSSING GATES
35kW+5KV INVERTEF	DC/DC CONVERTER, MULTIPLE REDUNDANT OUTPUT	



RAILWAY HVAC COMPRESSOR AND FANS POWER SOURCE

RAILWAY SIGNALING (ERTMS)

# QUICK PRODUCT GUIDE

DC/DC Converters								
Pro	duct series	Power [W]	Input voltag	e range [V]	Output voltage [V]	Temperature range [°c]	Cooling	Page
	CKR-2000	1920 - 2240	28 60	66 144	12, 24, 48	-25 70	Natural convection	23
Safet	CRS-120	100 - 140	9 15 18 30 36 72	50,4 90 77 144 165 275	5, 12, 24, 48	-25 80	Natural convection	21
SIF	CTS-120	100 - 140	14,4 30 21,6 47 28,8 60	43,2 90 66 144	5, 12, 24, 48	-25 85	Natural convection	21
	CLS-120	120	14,4 .	154	12, 24, 48	-40 85	Natural convection	22
S. M. B.	CRS-240	180-280	9 15 18 30 36 60	50,4 90 77 144 165 275	5, 12, 24, 48	-25 80	Natural convection	22
S. Mark	CTS-240	180 - 280	14,4, 30 21,6 47 28,8 60	43,2 90 66 144 132 275	5, 12, 24, 48	-25 85	Natural convection	23
and a fill	CRS-500	500	14,4 30 21,6 47 28,8 60	43,2 90 66 144	24, 48, 110	-25 70	Natural convection	24
in a	CRS-1000	1000	14,4 30 21,6 47 28,8 60	43,2 90 66 144	24, 48, 72, 110	-25 70	Natural convection	24
-	CRS-2000	2000	14,4,33,8 21,6 50,4 28,8 67,2	43,2 100,8 66 154	24, 48, 72, 110	-25 70	Internal fan Natural convection	25
No. of Concession, Name	CVS-280	280	500	1100	24, 48, 72, 110	-25 85	Natural convection	25
	CBS-10K	6000 average	16.8 (14.4 - 15		500	-40 85	Internal forced air	26

AC/AC VFD							
Proc	duct series	Power [W]	Input voltage range [V]	Output voltage [V]	Temperature range [°c]	Cooling	Page
	VDX-10K	10.000	360460	400	-25 85	Internal controlled fan	37
	TDS-3300	3.300	432528	230Vac (1ph) 400Vac (3ph)	-40 55	Internal force air with fan speed control	37

DC/AC Inverters								
Produ	uct series	Apparent Output Power [VA]	Input Voltage Range [V]	Output Voltage [V]	Temperature Range [°C]	Cooling	Page	
S.	OCS-260	260	9,5 15 33,6 6 16,8 30 50,4 9 25,2 45 77 13	120 230	-40 70	Natural convection	29	
	OPS-260	260	9,5 15 33,6 6 16,8 30 50,4 9 25,2 45 77 13		-40 70	Natural convection	29	
*	ODS-750	750	9,5 15 33,6 6 16,8 30 50,4 9 25 45 77 13		-25 70	Internal fan	30	
	ODS-1500	1200 - 1500	10 15 33,6 6 16,8 30 50,4 9 25,2 45 77 13	0 120 230	-25 70	Internal fan	30	
	ODS-3000	2400 - 4000	16,8 30 25,2 45 33,6 60 50,4 9 77 13		-25 70	Internal fan	31	
i.	ODX-1300	1300	16,8 30 50,4 90 77 138	🗰 3ph 250, 400	-25 85	Internal fan	31	
	ODX-3000	2400 - 3000	16,8 30 25,2 45 33,6 60 50,4 9 77 13		-25 85	Internal fan	32	
	ODX-4500	4500	50,4 90 70 125 77 138	000 3ph	-25 85	Internal fan	32	
	ODX-6000	4500 - 6000	16,8 30 50,4 9 33,6 60 77 13		-25 85	Internal fan	33	
	OVX-6400	6400	4001000	80 - 400	-25 85	Internal fan	33	

AC/DC UPS - Battery chargers							
Pro	oduct series	Power [W]	Input Voltage [V]	Output Voltage [V]	Temperature Range [°C]	Cooling	Page
1 million	ECS-200	200 - 230	88 133	12, 24, 48	-25 70	Natural convection	39
	EPS-120	120	184 264	48	-25 70	Natural convection	39
<b>F</b>	EPS-200	200	184 265	48	-25 70	Natural convection	40
1	EDT-150	150	<b>184 264</b>	Triple output: 12V/16A 48V/2,2A 48V/0,83A	-25 70	Natural convection	40
1-10	EDS-500	500	90 264	12, 24, 48	-25 70	Natural convection	41

# #WeArePremium

After 40 years of history as a company, we have achieved challenges that would have been impossible to accomplish without our team's talent. The experience provided by our senior members, along with the innovation and freshness of our latest additions, have made us better, faster and stronger. Premium PSU's values are our compass in our path to achieve the best version of our team. We are guided by:



- Innovation: continuous change and evolution bring top quality and state of the art technology
- Excellence: not losing sight of our strengths while improving our services has turned us into one of the most competitive organizations in the market.
- Flexibility: adaptive ability is one of our strengths. Challenges have no limits.
- Passion: we like what we do. We design and manufacture meticulously to offer unique technological products.
- Transparency: team members integrate our company's approach into their actions and make it their own. Premium's results are its team's outcome.

We also take responsibility for our role as a company in today's world through our commitment and ethical policies. We are aware that every action has an important impact, so we are committed to make positive social and environmental contributions. Our intentions come true through supporting the 2030 Plan defined in the United Nations Sustainable Development Goals (SDGs).

Thanks to the effort and continuous improvement on top of mind we transform challenges into sustainable and responsible solutions that will keep powering us to go even further. Our customers are an essential part of our company's mission, and that is why we make their challenges ours through innovative power conversion solutions.



In 2022 we launched Floox, our fast and ultra fast DC charging points for electrical vehicles.

We move towards a sustainable and efficient future where our habits should be much more respectful with our environment. A journey without return has started, and electrical mobility will be key to reach a world with no emissions and acoustic pollution.

At Premium PSU we are ready to contribute to this challenge with Floox.

30kW



**Power**floox

60kW



90kW - 360kW



*Super*floox

**Ultra**floox

# FLOOX 1))

# **Lyra** 60

- The most compact 60 kW DC fast charger in the market
- 100 % Made in Barcelona
- Simultaneous charge for two vehicles
- Stand alone or wall mounting
- 80% battery charged in 30 minuts with an anutonomy of 200-250km





# **#SHAPINGTHEFUTURE**



C/ Dolors Aleu, 19-21, Pl. 2ª 08908-L'Hospitalet de Llobregat Barcelona-Spain

tel. | +34 93 223 26 85 email | hello@premiumpsu.com web | premiumpsu.com

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