

The image features a dark teal background with a silhouette of an oil pumpjack in the foreground. In the background, an industrial refinery or power plant is visible, illuminated with bright lights. The Zutronic logo is prominently displayed in the upper center, consisting of a stylized red and white 'Z' followed by the word 'utronic' in white lowercase letters with a registered trademark symbol.

**zutronic**<sup>®</sup>

**NEVER WITHOUT POWER**

DC POWER SUPPLY SYSTEMS - AC POWER SUPPLY SYSTEMS

# COMPANY PROFILE

**ZUTRONIC** is a brand of the Company **ENERGY SERVICE** specialized in the design and production of custom power conversion systems for Oil & Gas, Energy, Transportation, Utilities, Industrial, Service and IT applications. Energy Service, with an experience of more than 30 years in the energy conversion sector, has been involved in hundreds of supplies to major EPCs for custom designed systems for international projects and solutions and has enabled us to acquire an important know-how that is constantly recognized.

Since the very first years, the company stood out for its technical competence and reliability to support its Customers in all phases of the project.

The products are designed and manufactured in the dedicated plant located in Mantova, while the headquarter and sales office are located in Brembate di Sopra (BG), about 40 km from Milan, near the electrical engineering sector Italian most important pole.

## VISION

Provide the maximum protection to Customer critical applications, even in harsh environmental conditions. Contribute to the reduction of energy consumption by offering efficient and competitive solutions

## MISSION

**Engage with passion and tenacity in providing appropriate solutions** in order to reach the highest level of reliability for **energy continuity** using technologically advanced equipment.

Guarantee a **full support to our Customers**, from technical support when choosing the product up to the scheduled maintenance. In summary, change our Company from simple providers to a **competent and reliable partner** with a 360° support in all phases of the project.

## CORPORATE VALUES

The company is committed to obtaining the main values on which it is founded for customers, employees and partners, in particular Customer Satisfaction, Competency, Reliability of both products and delivery and response time, constant and continuous improvement. In line with our vision, we set ourselves the goal of ethical management of environmental and human resources.

Our strengths are:

- Experience of more than 30 years in the power conversion industry
- Maximum flexibility in Custom solutions
- Strong technical skills
- Certified design and production made in Italy
- Innovative technologies

In 2017, the company is already certified according to the latest and most recent version of ISO9001: 2015 for the Quality Management System of its products, processes and services and its products comply with major international standards (IEC, EN, CEI)





**ABB**

**SIEMENS**

**SCHNEIDER ELECTRIC**

**GENERAL ELECTRIC**

**ALSTOM GRID**

**EDISON**

**BREMBO**

**GE GRID SOLUTIONS**

**VOITH HYDRO**

**REPOWER**

**ALPIQ ENERTRANS**

**DEUTSCHE BANK**

**CNR**

**SAME DEUTZ FAHR**

**SHERATON HOTEL**

**ANDRIZ HYDRO**

**MARCEGAGLIA**

**TENARIS**

**MoE**

**ENEL**

**GECOL**

**STE ENERGY**

**IVECO**

**HYDROENERGIA**

**INESING SPA**

**EDF FENICE**

**RIVA ACCIAIO**

**SOLAR TURBINES**

**HUMANITAS**

**ITALGEN**

**FRANCHINI ACCIAI**

**SABO FOAM**

**CONSORCIO RIO MANTARO**

**THYSSENKRUPP**



# DC POWER SUPPLY SYSTEMS

- RECTIFIERS - BATTERY CHARGERS
- DC-UPS
- DC/DC CONVERTERS
- DISTRIBUTION PANELS

We design and manufacture a wide range of **DC POWER SUPPLY SYSTEMS**.

Single branch and double branch rectifiers are available, but also systems with AC and DC current output integrated into a single solution.

All our products are customized according to Customer needs and designed for industrial and harsh environment applications.

## RECTIFIERS - BATTERY CHARGES **TITANIUM-CH SERIES**



### FEATURES

- Input transformer for AC/DC galvanic separations
- IGBT rectifiers technology
- Overvoltage and Undervoltage protection
- Suitable for vented/sealed Lead Acid and Ni/Cd batteries
- High customization level
- 16 bit microprocessor control
- Digital control panel for metering, signals, alarms and history events
- Parallel operation for redundant requirements

### APPLICATIONS

- Oil & Gas
- Petrochemical
- Energy
- Utilities
- Industry
- Transportation
- Health care
- Hydroelectric and Geothermal plant
- Building

## TITANIUM 1R-2R CH (Standard and Plus version)

## TECHNICAL DATA

### INPUT

Nominal voltage	230 Vac single phase or 400Vac three phase
Frequency	50/60Hz ± 5Hz

### OUTPUT

Nominal voltage	24/48/110/125 Vdc
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### RATING

10+100 A

### SYSTEM

Single branch (1R) and Double branch (2R)

### RECTIFIER TYPE

With Chopper IGBT technology

### STATIC VOLTAGE ADJUSTMENT

±1%

### RIPPLE

< 1%

### OVERLOAD

150% for 1"

### CHARGING CHARACTERISTIC

IU (according to DIN 41773)

### BATTERY

Suitable for vented/sealed Lead Acid and Ni/Cd batteries

### CABINET DEGREE OF PROTECTION

IP 30 (option up to IP41)

### COLOUR

RAL 7035

### INSULATION LEVEL

Input/output

### OPERATING TEMPERATURE

-10°C ÷ +40°C

### ALTITUDE

<2000 m (derating according to EN 62040-3)

### AUDIBLE NOISE AT 1 METER (dBA)

<65

### OPTIONS

Associated battery cabinet; block diode for parallel configuration; matching cabinets for distribution or dropping cell;

### USER INTERFACE

Front Panel LDC display with Led and test button (Titanium standard)

Touch screen display and test button (Titanium Plus)

### Connectivity

Up to 2 SPDT contact relay cards, Optional: RS485 ModBus-RTU serial port, ModBus to PROFIBUS DP adapter, Ethernet SNMP/WEB adapter, remote monitoring software



## RECTIFIERS - BATTERY CHARGES **TITANIUM-SCR**



### FEATURES

- Input transformer for AC/DC galvanic separations
- SCR rectifiers technology
- Overvoltage and Undervoltage protection
- Suitable for vented/sealed Lead Acid and Ni/Cd batteries
- High customization level
- 16 bit microprocessor control
- Digital control panel for metering, signals, alarms and history events
- Parallel operation for redundant requirements

### APPLICATIONS

- Oil & Gas
- Petrochemical
- Energy
- Utilities
- Industry
- Transportation
- Health care
- Hydroelectric and Geothermal plant
- Building

## TITANIUM 1R-2R SCR (Standard and Plus version)

## TECHNICAL DATA

### INPUT

Nominal voltage	230 Vac single phase or 400Vac three phase
Frequency	50/60Hz ± 5Hz

### OUTPUT

Nominal voltage	24/48/110/125/220 Vdc
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### RATING

10+500 A up to 125 Vdc and 250 A max at 220Vdc

### SYSTEM

Single branch (1R) and Double branch (2R)

### RECTIFIER TYPE

With SCR technology

### STATIC VOLTAGE ADJUSTMENT

±1%

### RIPPLE

< 1%

### OVERLOAD

150% for 1"

### CHARGING CHARACTERISTIC

IU (according to DIN 41773)

### BATTERY

Suitable for vented/sealed Lead Acid and Ni/Cd batteries

### CABINET DEGREE OF PROTECTION

IP 30 (option up to IP41)

### COLOUR

RAL 7035

### INSULATION LEVEL

Input/output

### OPERATING TEMPERATURE

-10°C ÷ +40°C

### ALTITUDE

<2000 m (derating according to EN 62040-3)

### AUDIBLE NOISE AT 1 METER (dBA)

<65

### OPTIONS

Associated battery cabinet; block diode for parallel configuration; matching cabinets for distribution or dropping cell;

### USER INTERFACE

Front Panel

LDC display with Led and test button (Titanium standard)

Touch screen display and test button (Titanium Plus)

Connectivity

Up to 2 SPDT contact relay cards, Optional: RS485 ModBus-RTU serial port, ModBus to PROFIBUS DP adapter, Ethernet SNMP/WEB adapter, remote monitoring software

# AC POWER SUPPLY SYSTEMS

- UPS FOR INDUSTRIAL APPLICATIONS
- INVERTERS
- VOLTAGE REGULATORS
- FREQUENCY CONVERTERS
- LV DISTRIBUTION PANELS

We design and manufacture a wide range of **AC POWER SUPPLY** Systems.

Single and three phase output systems with input output galvanic insulation are available.

All our products are customized according to Customer needs and designed for industrial and harsh environment applications.

## DC/AC INVERTERS **IRON SERIES**



### FEATURES

- Industrial Layout
- Static Conversion
- Microprocessor control
- Digital control panel
- Reduced output THD with not linear load
- IGBT technology bridge (PWM)
- Natural convection cooling
- Easy maintenance/front access
- Insulation: input/output galvanic insulation

### APPLICATIONS

- Oil & Gas
- Petrochemicals
- Energy
- Utilities
- Industry
- Transportation
- Health care
- Hydroelectric and Geothermal plant
- Building

## IRON-M (Single Phase) and IRON-T (Three Phase)

## TECHNICAL DATA

<b>INPUT</b>	Voltage	110, 220 Vdc (other options upon request)	<b>STANDARDS</b>	Marking	CE
	Voltage range	-20% +40%		Degree of Protection	IEC 60529
	By-pass emergency line input voltage	1Ph 230Vac ±10% o 3Ph 400Vac ±10% (other options upon request)		EMC	EN 61000-6-2 EN 61000-6-4
	Inrush Current	<8 In		Safety	IEC EN 50178
	Protections	Over-voltage, Under-voltage		Semiconductor Converters	EN 60146
<b>OUTPUT</b>	Voltage	1Ph 230 Vac - 3Ph 400Vac (other options upon request)	<b>GENERAL</b>	Cooling method	Natural convection cooling (depending on the powers)
	Frequency	50 ÷ 60 Hz		Operative Temperature	-10°C + 50°C
	Nominal Power (cosphi=0,8)	1Ph max 25KVA (110Vdc) - 1Ph max 50KVA (220Vdc) - 3Ph max 45KVA (110Vdc) - 3Ph max 90KVA (220Vdc)		Relative Humidity	≤ 95% a 40°C
	Static adjustment	±1%		Altitude	≤ 1000 m
	Dynamic adjustment	<5% with recovery to 2% in 40 ms		Acoustic noise	≤ 60dbA at 1 meter
	Total Harmonic distortion (THD)	≤ 3% with linear load / ≤ 5% with not linear load CF 3:1		Full load efficiency	≥ 88%
	Overload	110% Pn for 2h - 125% for 10 min - 150% for 10 sec		MTBF	140.000 hr at 30 °C
Protections	Over-voltage, Under-voltage				
<b>DEGREE OF PROTECTION</b>	IP20 (other options upon request)		<b>COLOUR</b>	RAL 7035 (other options upon request)	



# UPS FOR INDUSTRIAL APPLICATIONS **WAVE SERIES**

- POWER RATING: FROM 5KVA TO 90KVA
- INPUT: 400V 3Ph
- OUTPUT: 230V 1Ph OR 400V 3Ph
- BATTERY VOLTAGE: 110Vdc/220Vdc

**WAVE SERIES UPS** are double conversion VFI ON-LINE and are suitable for industrial applications, even the very critical ones.

It is possible to customize the product according to the customer design requirements.



## FEATURES

- Industrial Layout
- Static Conversion
- Microprocessor control
- Digital control panel
- Reduced output THD with not linear load
- IGBT technology bridge (PWM)
- Natural convection cooling
- Easy maintenance/front access
- Insulation: input/output galvanic insulation

## APPLICATIONS

- Oil & Gas
- Petrochemicals
- Energy
- Utilities
- Industry
- Transportation
- Health care
- Hydroelectric and Geothermal plant
- Building

## MAIN OPTIONS

- 12 pulse rectifier
- Ac/Dc distribution panel
- Internal Lighting
- Internal Heater
- By-Pass line isolator
- Transformer

## WAVE-TM (Single Phase) and WAVE-TT (Three Phase)

## TECHNICAL DATA

<b>INPUT</b>	Rated Voltage	3Ph 400Vac 50/60Hz (other options upon request)			
	Power Factor	0,8 @ full load			
	THD	≤ 30% typ.			
<b>OUTPUT</b>	Output Voltage	1Ph 230 Vac / 3Ph 400Vac 50/60 Hz (other options upon request)			
	By-pass emergency line input voltage	1Ph 230Vac ±10% or 3Ph 400Vac ±10% (other options upon request)			
	Nominal Power (cosphi=0,8)	1Ph max 25KVA (Battery=110Vdc) - 1Ph max 50KVA (Battery=220Vdc) 3Ph max 45KVA (Battery=110Vdc) - 3Ph max 90KVA (Battery=220Vdc)			
	Static stability	±1%			
	Dynamic stability	± 5% (load step) with recovery to 2% in 40 ms			
	Total Harmonic distortion (THD)	≤ 2% with linear load / ≤ 5% with not linear load CF 3:1			
	Overload	105% permanent - 125% for 10 min - 150% for 1 min. 200% for 100 ms			
Protections	Over-voltage, Under-voltage				
<b>DC LINK</b>	DC Voltage	110Vdc (90-150Vdc) /220Vdc (180-300Vdc)			
<b>CONTROLS &amp; SIGNALLING</b>	Microprocessor	High Performance 8-Bit Microcontroller			
	LCD Panel	Backlit graphic LCD for meters, alarm and status messages			
	Mimic Panel	Principle block diagram of the UPS with 9 integrated LED			
	Signalling LED	Inverter normal, Inverter Fault, Rectifier normal, Rectifier Fault			
	Volt Free signalling contacts	AC input supply failure, Rectifier Failure, DC voltage LOW/HIGH, Battery discharging, Battery disconnected, Inverter failure, Inverter overload, Inverter over temperature, Ac output voltage LOW/HIGH, Ventilation failure, DC earth fault (optional)			
<b>GENERAL</b>	Cooling method	Cabinet: Natural - Semiconductor heat sink: Fan assisted	<b>STANDARDS</b>	Marking	CE
	Operative Temperature	0°C + 40°C not condensing		Degree of Protection	IEC 60529
	Relative Humidity	≤ 95% at 40°C		EMC	EN 61000-6-2, EN 61000-6-4
	Altitude	≤ 1000 m without derating		Safety	IEC EN 50178
	Acoustic noise	≤ 65-70dba at 1 meter		Semiconductor Converters	EN 60146
	Full load Efficiency	≥ 88%			
	MTBF	140.000 hr at 30 °C			
	Degree of Protection	IP20 (other options upon request)			
	Colour	RAL 7035 (other options upon request)			
	Accessibility	Front Door			



**zutronic®**  
A BRAND OF ENERGY SERVICE

Via Gaetano Donizetti, 109/111 - 24030 Brembate Di Sopra (BG) - ITALY  
Geller Business Centre - D2 Building

Phone **+39 035 4379962** Fax **+39 035 592935** - [sales@zutronic.it](mailto:sales@zutronic.it) - [www.zutronic.it](http://www.zutronic.it)

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BUREAU VERITAS  
Certification

