

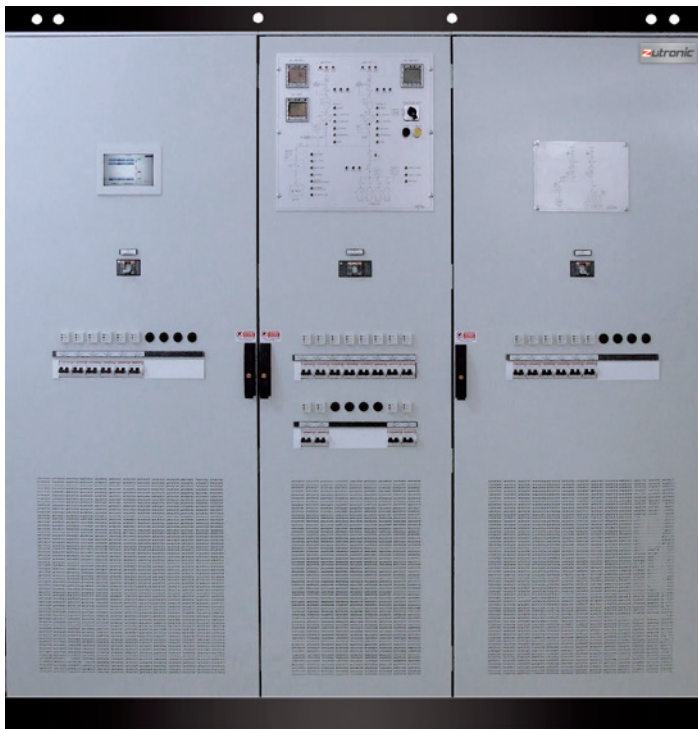
## **WAVE**

### **INDUSTRIAL AC UPS**

#### **AC/AC SINGLE PHASE OR THREE PHASE OUTPUT UPS**

WAVE is an industrial double conversion ON-LINE UPS, designed to guarantee a continuous and stabilized power supply to critical loads. WAVE is developed as a "Heavy Duty" equipment thanks to its reliability, and it is particularly suited to harsh environmental conditions. The product can be easily customized according to the Client's needs and can be configured on the basis of the project's Technical Specifications. Transformer for AC/DC galvanic isolation, static and manual bypass are provided as standard, as well as microprocessor control and digital HMI interface.

The product can be combined with sealed or vented lead acid or NiCd batteries.



#### **MAIN FEATURES**

- Industrial layout, custom made
- Very high level of customizability
- ON LINE double conversion configuration
- Microprocessor controlled
- HMI LCD digital display
- THD di uscita ridotto con carichi lineari
- Reduced output THD with not linear load
- Inverter unit IGBT-based (PWM)
- Battery voltage Temperature compensation
- Easy maintenance with front access
- IN/OUT galvanic insulation

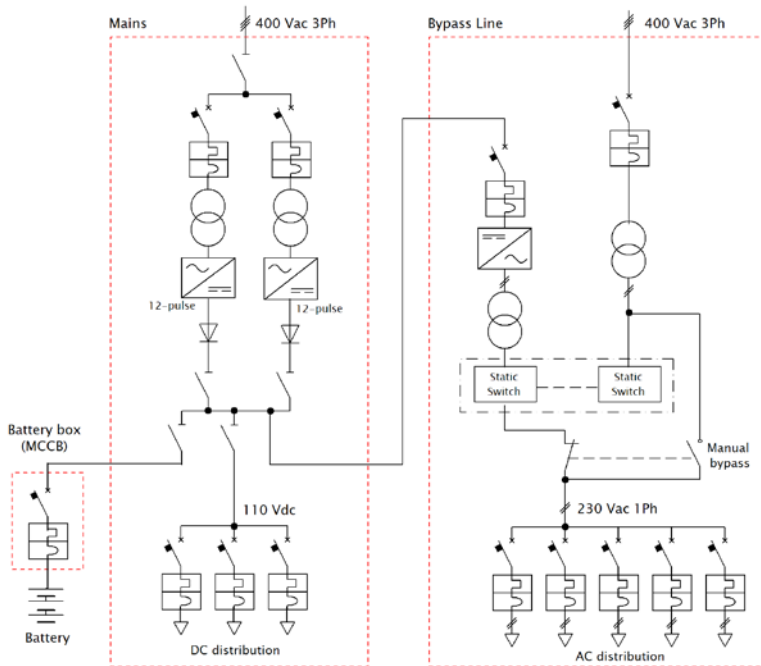
#### **OPTIONS**

- Rectifier bridge thyristor 12-pulse
- Bypass line isolating transformer
- Bypass line automatic voltage regulator AVR
- AC & DC distribution boards
- Redundant ventilation
- Dual redundant parallel configuration
- Communication interfaces (Modbus 485 - TCP/IP - Ethernet)
- Printed circuit boards tropicalization
- Heater resistor
- MCCB/ mothorized MCCB breakers
- Customized IP protection degree (e.g. IP31, IP42...)
- Fuse box / Breaker box for battery protection

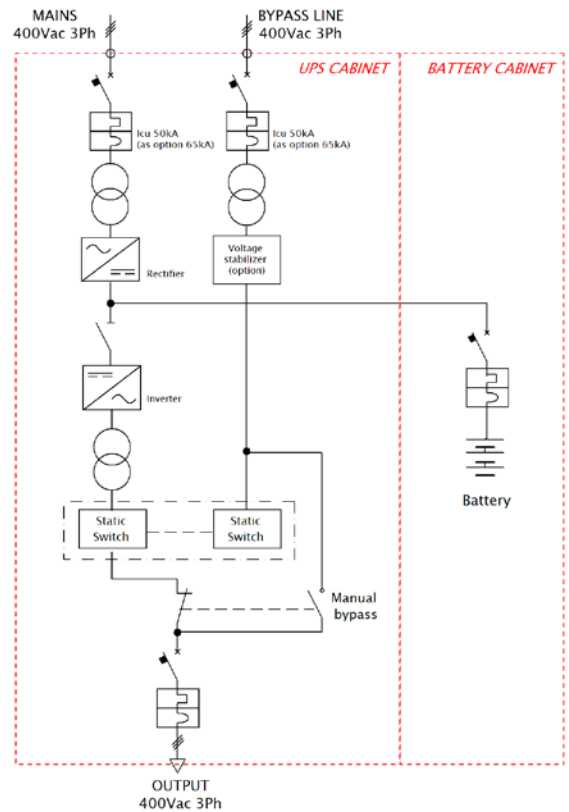
#### **APPLICATIONS**

- Oil & Gas
- Petrochemical
- Power & Utilities
- Industry
- Impianti Idroelettrici and Geotermici

## EXAMPLES OF WAVE CONFIGURATIONS (SINGLE LINE DIAGRAM)



Single WAVE industrial UPS, with bypass line and batteries in dedicated cabinet



Redundant WAVE industrial UPS with thyristor 12-pulse rectifier bridge, dedicated cabinet for inverter unit and bypass line, DC and AC distribution boards and battery racks

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

<b>OUTPUT</b>	NOMINAL VOLTAGE (V)	1Ph 230 Vac / 3Ph 400Vac 50/60 Hz (other upon request)
	BY-PASS EMERGENCY LINE INPUT VOLTAGE	1Ph 230Vac ±10% or 3Ph 400Vac ±10% (other upon request)
	NOMINAL POWER (COSPHI=0,8)	1Ph: max 50KVA (VBatteries=110Vdc), max 100KVA (VBatteries=220Vcc) 3Ph: max 100KVA (VBatteries=110Vdc), max 150KVA (VBatteries=220Vcc)
	STATIC STABILITY	±1%
	DYNAMIC STABILITY	± 5% (load step) with recovery 2% in 40 ms
	ARMONIC DISTORTION /THD)	≤ 2% with linear load / ≤ 5% with not linear load CF 3:1
	OVERLOAD	105% continuous - 125% for 10 min - 150% for 1 min. 200% for 100 ms
	PROTECTIONS	Overvoltage, undervoltage
<b>INPUT</b>	NOMINAL VOLTAGE (V)	3F 400Vac 50/60Hz (other upon request)
	POWER FACTOR	0,8 at full load
	THD	≤ 30% (rectifier bridge 6-pulse), ≤ 12% (rectifier bridge 12-pulse)
<b>BUS DC</b>	VOLTAGE BUS DC	110Vdc / 220Vdc / 400Vdc
<b>CONTROL and SIGNALS</b>	MICROPROCESSOR	High performance 8-Bit digital microcontroller
	LCD DISPLAY	Backlit graphic LCD display for measurements, alarms and status messages
	MIMIC PANEL	UPS with 9 LED graphic block diagram
	LED SIGNALS	Inverter ok, Inverter faulty, Rectifier Ok, Rectifier faulty
	VOLT FREE SIGNALLING CONTACTS	Power failure Input, Faulty rectifier, Low/High DC voltage, Battery discharging, Battery disconnected, Faulty inverter, Inverter overload, Inverter overtemperature, Low/High AC output voltage, Fan fault, Grounded pole (option).
<b>GENERAL</b>	COOLING SYSTEM	Cabinet: Natural - Semiconductor - Heat sink: Fan assisted
	OPERATING TEMPERATURE	0°C + 40°C without condensation
	HUMIDITY	≤ 95% a 40°C
	ALTITUDE	≤ 1000 m without derating
	NOISE	≤ 65-70dba a 1 meter
	EFFICIENCY AT FULL LOAD	≥ 88%
	MTBF	140.000 hr aTt 30 °C
	PROTECTION DEGREE	IP30 (other options available upon request)
	COLOR	RAL 7035 (other options available upon request)
	ACCESS	Front door
<b>STANDARDS</b>	MARKING	CE
	PROTECTION DEGREE	IEC 60529
	EMC	EN 61000-6-2, EN 61000-6-4, IEC 62040-2
	SAFETY	IEC EN 50178, IEC 62040-1
	SEMICONDUCTOR CONVERTERS	EN 60146
	AC UPS (performance)	IEC 62040-3



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