100% MADE IN ITALY

POWER YOU CAN RELY ON

General catalogue

POWERTRONIX
Uninterruptible Power Supply

POWERTRONIX
LIGHTS UP RIO 2016 OLYMPIC GAMES

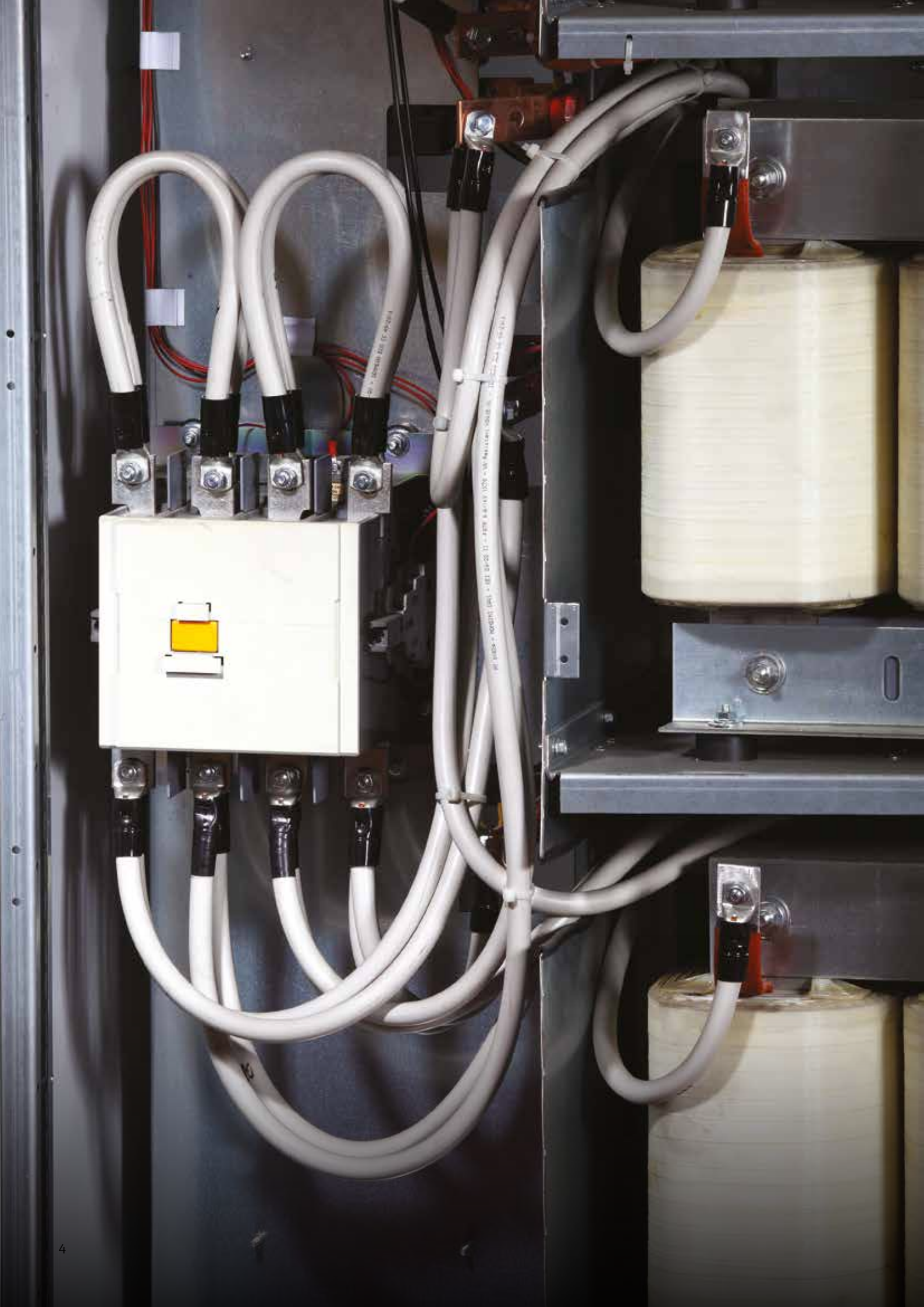
Engenhão Stadium, Olympic Games Rio de Janeiro 2016, power safety granted by Powertronix technology.

POWERTRONIX
Not UPS only

On the market since 1986, Powertronix is internationally known and appreciated, even before the proverbial reliability of its uninterruptible power supplies, for that spirit of constant research, development and innovation which hovers over its Grezzago headquarters, and which has made it a reference point of that Italian entrepreneurship which still knows how to represent a quality benchmark in the world.

The soul of Powertronix is still that of its founder Luigi Modenesi who designed the first transistor UPS in the late 70s, making what was on the market at the time seem suddenly obsolete.

Today we find the same desire to revolutionise through the same new and more efficient approach which drove the founder in the new tri-level UPS from the Hyperion series, characterised by performances above 97% and by Powertronix's interest in the topics of renewable energy and storage, an interest which has led to creating Enerclever, a line of smart products, capable, for example, of reducing generators' consumption by 60%. As you will have understood, Powertronix is and remains an advanced research and experimentation team with the ability to still produce equipment intended to make the history of power electronics with a passionate craftsmanship.After all, if the Olympic committee resorted to Powertronix technology in order to ensure a continuous power supply in stadiums throughout the Rio 2016 Olympic Games, there must be a reason.



UNINTERRUPTIBLE POWER SUPPLIES

THREE-PHASE

- SCR Serie from 50kVA to 300kVA
- IGBT Series from 10kVA to 200kVA
- Multilevel Series from 10kVA to 500kVA
- Modular Series from 20kVA to 850kVA
- Rack Indipendent Series from 10kVa to 200kVa

UNINTERRUPTIBLE POWER SUPPLIES

SINGLE-PHASE

- Tower - from 1kVA to 10kVA
- RackTower - from 1kVA to 10kVA

ENERCLEVER

- BID/UPS from 50kVA to 300kVA
- Energy Station - custom designed to fit customer requirements

DC system

- CMP Series
- CMP-R Series

THREE-PHASE
UNINTERRUPTIBLE POWER SUPPLIES

For all three-phase installations, Powertronix offers Online Double Conversion Uninterruptible Power Supplies (classification according to IEC EN 62040-3 VFI SS 111 standards): a broad range of solutions entirely designed, produced and tested in Italy, at the Powertronix headquarters in Grezzago, according to ISO 9001 certified quality procedures.

Every Powertronix UPS is ideal for protecting all critical systems, such as computer networks, industrial processes, particularly in the health and pharmaceutical sector, telecommunications, transport, and all those contexts where the effective management of the quality of the energy supply is significantly important, in view of the key role played by electrical and electronic equipment.

The construction features of the various series on offer, ensure choosing the model suitable for every single and specific installation environment, with highly technological and innovative solutions that guarantee quality of energy and a continuous power supply for each user.

SCR series

UPS characterised by SCR input section and high efficiency IGBT output inverter, without transformer. Ideal for industrial plants, production lines, infrastructures and installations in remote areas. It includes the UPS Vela - Atlas - Supernova products from 50kVA to 300kVA

IGBT series

UPS characterised by PFC IGBT input section, with low distortion sine wave absorption, and by an output section with high efficiency IGBT inverter, without transformer. The perfect choice for any type of conventional load, common in various types of applications. It includes the Mizar - Alcor - Auriga - Auriga HP families with power ranges from 10kVA to 200kVA

Multilevel Series

UPS designed to offer extremely high performance and unit power factor. Thanks to the IGBT-based design in multi-level topology. Ideal for installations in IT infra-structures, telecommunications, lighting systems. The Multilevel series develops power ranges from 10kVa to 500kVa.

Modular series

Created to be integrated in computer centres, this UPS series features PFC IGBT input section, with low distortion sine wave absorption, and an output section with high efficiency IGBT inverter, without transformer and unit power factor. An almost obligatory choice for IT applications, it is also appreciated in areas where current loads are destined to grow in the near future. The series covers power ranges from 20kVa up to 300kVa in a single machine.

SCR SERIES

The SCR series includes the Vela UPS, Atlas UPS and Supernova UPS products, characterised by a design that makes them suitable to be installed in remote areas with very unstable public networks. It has an input section with 6-pulse rectifier, with the possibility to upgrade to 12 pulses, with harmonic suppression filter, and an output section with high efficiency IGBT inverter, without transformer.

Thanks to the solutions adopted, the series guarantees maximum protection of power users and full compatibility with generators or separate sources, for all installations with three-phase power supply, in the 50kVA - 60kVA - 80kVA - 100kVA - 120kVA - 160kVA - 200KVA - 250KVA - 300kVA power range. All models have an RS232 communication port, an "intelligent slot" for installing a network adapter (optional SNMP card), a voltage free contact board, and an EPO remote contact for UPS remote shut-down.

The proven reliability, in addition to the simplicity of installation and maintenance, ensure these UPS are ideal for the quality of the energy delivered and the safety of your systems.

SUPERNOVA UPS 160÷300kVA

ATLAS UPS 80÷120kVA

VELA UPS 50÷60kVA

Model	VL50	VL60	AT80	AT100	AT120	SN160	SN200	SN250	SN300
Input									
Input nominal voltage	3Ph+N 380/400/415V								
Input nominal frequency	50 or 60 Hz								
Input frequency range	40 ÷ 70 Hz								
Power factor	0.99								
Soft start	0 ÷ 100% in 30 sec								
Backfeed protection	on request								
Input current distorsion	THDi ≤5% (12 pulse vers. + filter)								
Automatic Bypass									
Bypass nominal voltage	3Ph 380/400/415 V								
Bypass nominal frequency	50 or 60 Hz								
Output									
Output nominal power KVA	50	60	80	100	120	160	200	250	300
Output active power KW	40	48	64	80	96	128	160	200	240
Output nominal voltage	3Ph+N 380/400/415V								
Output static voltage stability	± 1%								
Output dynamic voltage stability	± 5%								
Crest factor	3:1								
Output voltage distorsion (linear load)	≤ 3%								
Output nominal frequency	50Hz or 60Hz								
Output frequency stability	0.01%								
Battery									
Battery type	VRLA AGM o VRLA GEL								
Max charging current	25					50			
Battery charging profile	DIN 41733 Temperature compensated								
Communication									
Remote signals	Remote EPO - External ByPass								
Communication interface	Serial RS232, Dry Contacts								
Options	Serial RS485 ModBus; IP Network SNMP/HTTP/MODBUS								
Mechanical data									
Protection	IP 20								
Dimensions mm	530x950xh1230		700x740xh1800			1240x800xh1800			
Weight Kg	182	192	350	390	430	570	600	683	693
Noise at 1m dBA	62					64			
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)								
Working environment temperature	+20°C ÷ +40°C								
Relative humudity	95% non condensing								
Altitude	1000m slm (1% derating every 100m up to 2000m)								
Cooling	forced air regulated speed								
General									
UPS efficiency	94%								
Overload	125% 10 min; 150% 60 sec								
Standards	**Direttives** : LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3								

IGBT SERIES

The IGBT series consists of the Mizar, Alcor, Auriga and Auriga HP families. Developed in Italy with today's most widespread technology, they meet the VFI-SS-111 CEI and EN62040 standards. Made wholly in Italy according to ISO9001 standards, the entire IGBT series represents the ideal solution for protecting IT infrastructures, industrial production lines, lighting and telecommunication systems, where the quality of the energy supplied is essential for the optimal operation of all the connected equipment.

The series, characterised by 0.9 PF, covers a broad power range, from 10KVA up to 200KVA in single units, but with the possibility of setting up parallel systems up to 8 units for a maximum power of 1.6MVA.

All models have, already in their standard configuration, an RS232 communication port, an RS485 interface with Modbus RTU protocol, an "intelligent slot" for installing the optional network adapter (TCP/IP, SNMP, HTTP, MODBUS and others), a voltage free contact board, an auxiliary contact input, an external manual by-pass, an EPO (Emergency Power Off) remote contact for the UPS remote shutdown.

AURIGA HP UPS 120÷200kVA

AURIGA UPS 60÷100kVA

ALCOR UPS 20÷40kVA

MIZAR UPS 10÷15kVA

ON FIELD FLEXIBILITY.
3 phase to 3 phase.
3 phase to 1 phase.
1 phase to 1 phase.
1 phase to 3 phase.

Model	MZ10	MZ15	AL20	AL30	AL40	AU060	AU080	AU100	AU120	AU160	AU200
Input											
Input nominal voltage	1Ph 220/230/240V or 3Ph+N 380/400/415V					3Ph+N 380/400/415V					
Input nominal frequency	50 or 60 Hz										
Input frequency range	40 ÷ 70 Hz										
Power factor	0.99										
Soft start	0 ÷ 100% in 30 sec										
Backfeed protection	on request										
Input current distorsion	THDi ≤3%										
Automatic Bypass											
Bypass nominal voltage	1Ph 220/230/240V or 3Ph+N 380/400/415V					3Ph+N 380/400/415V					
Bypass nominal frequency	50 or 60 Hz										
Output											
Output nominal power KVA	10	15	20	30	40	60	80	100	120	160	200
Output active power KW	9	13,5	18	27	36	54	72	90	108	144	180
Output nominal voltage	1Ph 220/230/240V or 3Ph+N 380/400/415V							3Ph+N 380/400/415V			
Output static voltage stability	± 1%										
Output dynamic voltage stability	± 5%										
Crest factor	3:1										
Output voltage distorsion (linear load)	≤ 1%										
Output nominal frequency	50Hz or 60Hz										
Output frequency stability	0.01%										
Battery											
Battery type	VRLA AGM o VRLA GEL										
Max charging current	25% nominal power										
Battery charging profile	DIN 41733 Temperature compensated										
Communication											
Remote signals	Remote EPO - External ByPass										
Communication interface	Serial RS232/RS485 Modbus, Dry contacts										
Options	IP network SNMP/HTTP/MODBUS										
Mechanical data											
Protection	IP 20										
Dimensions mm	390x900xh910					410x830xh1510			800x840xh1800		
Weight Kg	70	70	75	80	90	240	270	290	480	540	590
Noise at 1m dBA	54		56	58		65			66		
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)										
Working environment temperature	+20°C ÷ +40°C										
Relative humudity	95% non condensing										
Altitude	1000m slm (1% derating every 100m up to 2000m)										
Cooling	forced air regulated speed										
General											
UPS efficiency	95,5%										
Overload	125% per 10 minuti; 150% per 60 secondi										
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3										

MULTILEVEL SERIES

The Multilevel series is the latest born. Also fully designed and manufactured in Italy, it adopts the most advanced technology that can be found in the world of UPS. Composed of an inverter and a multilevel type PF controller, it guarantees a very high performance, 97%, and very low levels of harmonics injected into the network, thus saving money on the consumption deriving from the use of the UPS itself. This latest technology subjects the components to less electrical stresses, thus increasing the reliability of the equipment.

Designed according to the VFI-SS-111 (CEI and EN 62040) regulations in force and built according to ISO 9001 standards, the Multilevel series covers the power range from 100KW to 300KW, with PF 1.

As occurs for the entire Powertronix production, these UPS also feature, as standard design, an RS232 communication port, an RS485 interface with Modbus RTU protocol, an "intelligent slot" for installing the optional network adapter (TCP/IP, SNMP, HTTP, MODBUS and others), a voltage free contact board, an auxiliary contact input, an external manual by-pass, an EPO (Emergency Power Off) remote contact for the UPS remote shutdown.

VECTOR HP UPS
10÷30kVA

HYPERION UPS
100÷300kVA

SIRIO UPS
300÷500kVA

Model		VNVH 10	VNVH 20	VNVH 30
CAPACITY*		10 KVA/10 KW	20 KVA/20 KW	30 KVA/30 KW
Input				
Voltage Range	Low Line Loss	110 VAC(Ph-N) ± 3 % at 50% Load 176 VAC(Ph-N) ± 3 % at 100% Load		
	High Line Loss	300 VAC(L-N) ± 3 % at 50% Load 276 VAC(L-N) ± 3 % at 100% Load		
Frequency Range		46Hz ~ 54 Hz nel sistema 50Hz 56Hz ~ 64 Hz nel sistema 60Hz		
Phase		3 Phase with Neutral		
Power Factor		≥ 0.99 at 100% Load		
Output				
Phase		3 Phase with Neutral		
Output voltage		360/380/400/415VAC (Ph-Ph) - 208*/220/230/240VAC (Ph-N)		
AC Voltage Regulation		± 1%		
Frequency Range (Synchronized Range)		46Hz ~ 54 Hz @ 50Hz system - 56Hz ~ 64 Hz @ 60Hz system		
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz or 60Hz ± 0.1 Hz		
Overload	AC mode	100%~110%: 60min; 110%~125%: 10min; 125%~150%:1min;>150% : immediately		
	Battery mode	100%~110%: 60min; 110%~125%: 10min; 125%~150%:1min;>150% : immediately		
Current Crest Ratio		3:1 max		
Harmonic Distortion		≤ 2% al 100% di carico lineare≤ 5% al 100% del carico non lineare		
Transfer Time	Line ↔Battery	0 ms		
	Inverter ↔Bypass	0 ms (When phase lock fails, <4ms interruption occurs from inverter to bypass)		
	Inverter ↔Eco	<10 ms		
Topology		multilevel		
Efficiency				
AC mode		96,5%		
Battery Mode		95,5%		
Battery				
Standard Model	Type	12 V/7 Ah	12 V/9 Ah	12 V/7 Ah
	Numbers	(10+10) pcs	(16+16) pcs x 2 strings	
	Recharge Time	9 hours recover to 90% capacity		
	Charging current(max.)	2.0 A ± 10% (Recommended) 1.0~12.0A (Adjustable)		
	Charging voltage	+/-136,5 V CC ± 1%	+/-218 V CC ± 1%	
Long-run Model	Type	Depending on applications		
	Numbers	20	32 ~ 40 (adjustable)	
	Charging current(max.)	1,0~12,0A ±10% (adjustable)		
	Charging voltage	+/- 13,65 V CC * N ± 1% (N = 16~20)		
Physical		175	185	245
Standard Model	Dimension,D x W x H (mm)	626 x 250 x 750		815 x 300 x 1000
	Net Weight (kgs)	124/126	139/141	225/230
Long-run Model	Dimension,D x W x H (mm)	626 x 250 x 750		815 x 300 x 1000
	Net Weight (kgs)	28/30	43/45	60/65
Environment				
Operation Temperature		0 ~ 40°C (the battery life will down when > 25°C)		
Operation Humidity		<95 % and non-condensing		
Operation Altitude**		<1000 m**		
Acoustic Noise Level		Less than 55dB @ 1 Meter	Less than 58dB @ 1 Meter	Less than 65dB @ 1 Meter
Management				
Smart RS-232 or USB		Supports Windows® 2000/2003/XP/Vista/2008/7/8/10, Linux, Unix, and MAC		
Optional SNMP		Power management from SNMP manager and web browser		

* Derate capacity to to 90% when the output voltage is adjusted to 208VAC.

** If the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated 1% per 100m.

***Product specifications are subject to change without further notice.

Model	HY100	HY120	HY160	HY200	HY250	HY300
Input						
Input nominal voltage	3Ph+N 380/400/415V					
Input nominal frequency	50 or 60 Hz					
Input frequency range	40 ÷ 70 Hz					
Power factor	0.99					
Soft start	0 ÷ 100% in 30 sec					
Backfeed protection	standard for Plus version					
Input current distorsion	THDi ≤2,5%					
Automatic Bypass						
Bypass nominal voltage	3Ph 380/400/415 V					
Bypass nominal frequency	50 or 60 Hz					
Output						
Output nominal power KVA	100	120	160	200	250	300
Output active power KW	100	120	160	200	250	300
Output nominal voltage	3Ph+N 380/400/415V					
Output static voltage stability	± 1%					
Output dynamic voltage stability	± 5%					
Crest factor	3:1					
Output voltage distorsion (linear load)	≤ 1%					
Output voltage distorsion (non linear load)	≤ 5%					
Output nominal frequency	50Hz or 60Hz					
Output frequency stability	0.005%					
Battery						
Battery type	VRLA AGM or VRLA GEL					
Max charging current	25% nominal power					
Battery charging profile	DIN 41733 Temperature compensated					
Communication						
Remote signals	EPO remoto - ByPass esterno					
Communication interface	Serial RS232/RS485 Modbus, Dry contacts					
Options	IP network SNMP/HTTP/MODBUS					
Mechanical data						
Protection	IP 20					
Dimensions mm	558x838xh1804		800x838xh1804		1035x838xh1804	
Weight Kg	490	520	690	740	870	950
Noise at 1m dBA	62		63		64	
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)					
Working environment temperature	+20°C ÷ +40°C					
Relative humudity	95% non condensing					
Altitude	1000m slm (1% derating every 100m up to 2000m)					
Cooling	forced air controlled speed					
General						
UPS efficiency	97% on-line; 99,5% eco-mode					
Overload	125% 15 min; 150% 60 sec					
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3					

Model	SR300	SR400	SR500
Input			
Nominal voltage		380/400/415 VAC 3 P+N	
Nominal frequency		50 or 60 Hz	
Frequency range		÷10% (Selectable)	
Power factor		>0.99	
Soft start		0 ÷ 100% in 30 sec	
Backfeed protection		Optional	
Current distortion		<3%	
Automatic bypass		Without interruption	
Bypass nominal voltage		3Ph 380x/400/415 V	
Bypass nominal frequency		50 or 60 Hz	
Output			
Nominal power KVA	300	400	500
Active power KW	300	400	500
Nominal voltage		380/400/415 VAC 3 P+N	
Static voltage stability		± 1%	
Dynamic voltage stability		±3%	
Crest factor		3:1	
Voltage distortion (linear load)		<1%	
Voltage distortion (non linear load)		<3%	
Nominal frequency		50Hz o 60Hz	
Frequency stability		0.005%	
Battery			
Battery type		VRLA/GEL	
Max charging current		25% nominal power	
Battery charing profile		DIN 41733 Temperature compensated	
Comunication			
Remote signals		Remote EPO - External bypass	
Communication interface		RS232 Serial and RS485 Ports - 2 Communication Slots	
Options		Dry Contact - SNMP, ModBUS RTU / ModBUS TCP, ProfiBUS, Remote Emergency Power Off, Remote Display Panel	
Mechanical data			
Protection		IP 20	
Dimensions mm	1200x825xh1854	1200x825xh1854	1200x825xh1854
Weight kg	830	840	850
Noise at 1m dBa		<74DbA	
Storing temperature		-20°C ÷ +70°C (UPS) • +20°C ÷ +30°C (Batteries)	
Working environment temperature		-5°C ÷ +70°C (UPS) • +20°C ÷ +30°C (Batteries, with derating)	
Relative humudity		95% non condensing	
Altitude		1000m asl (1% derating every 100m up to 2000m)	
Cooling		Forced air controlled speed	
General			
UPS efficiency		96%	
Overload		At 125% Load 10 min, At 150% Load 1min	
Standards		**Direttive**: LV 2014/35/UE Low Voltage Directive • EMC 2014/30/UE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 • IEC 62040-3 VFISS - 111 • RoHs compliant	

MODULAR MV SERIES

The modular series, designed in Italy with today's most widespread technology, also complies with the VFI-SS-111 CEI and EN62040 standards. Built according to ISO9001 standards, the entire modular series represents the ideal solution for protecting IT infrastructures, where the quality of the energy supplied is essential for the optimal operation of all the connected equipment.

The series, characterised by PF 1, covers a broad power range, from 20KW up to 300KW as a single unit, but with the possibility of composing 2-rack systems in parallel for a maximum power of 420KW.

All models have, as standard design, an RS232 communication port, an RS485 interface with Modbus RTU protocol, an "intelligent slot" for installing the optional network adapter (TCP/IP, SNMP, HTTP, MODBUS and others), a voltage free contact board, an auxiliary contact input, an external manual bypass, an EPO (Emergency Power Off) remote contact for the UPS remote shutdown.

AURIGA MV FAMILY 20÷300kVA

Model	AUVM80	AUVM120	AUVM200	AUVM90	AUVM120	AUVM180	AUVM210	AUVM300	AUVM60E	AUVM90E
Fitting power modules (KVA)	20	20	20	30	30	30	30	30	20	30
Max power modules number	4	6	10	3	4	6	7+1	10	3	3
Input										
Input nominal voltage	3Ph+N 380/400/415V									
Input voltage range	305 ÷ 478 VAC at 100% load; 208 ÷ 304VAC at <70% load									
Input frequency nominal/range	50 or 60 Hz / 45 ÷ 66 Hz									
Power factor	0.99									
Backfeed protection	on request									
Input current distorsion	THDi ≤3%									
Automatic Bypass										
Bypass nominal voltage	3Ph 380/400/415 V									
Bypass nominal frequency	50 or 60 Hz									
Output										
Output nominal power KVA	80	120	200	90	120	180	210	300	60	90
Output active power KW	80	120	200	90	120	180	210	300	60	90
Output nominal voltage	3Ph+N 380/400/415V									
Output voltage stability	Static ± 1% / Dynamic ± 5%									
Output voltage distorsion (linear load)	≤ 1%									
Output nominal frequency	50Hz o 60Hz									
Output frequency stability	0.01%									
Battery										
Battery type	VRLA AGM o VRLA GEL									
Max charging current	6A each 20KVA power module / 8A each 30KVA power module									
Battery charging profile	DIN 41733 Temperature compensated									
Communication										
Remote signals	Remote EPO - Extenal ByPass									
Communication interface	Serial RS232/RS485 Modbus, Dry Contacts									
Options	IP Network SNMP/HTTP/MODBUS									
Mechanical data										
Protection	IP 20									
Dimensions rack mm 1100x600xh...	1475mm 30U		2010mm 42U	1475mm 30U		2010mm 42U			1000x514xh763mm 15U	
Rack weight Kg	175	185	245	180	185	240	255	275	195	195
Power module weight and dimensions	650x440xh132(3U) / 34Kg									
Noise at 1m dBA	58 ÷ 62 dBA									
Working environment temperature	+20°C ÷ +40°C / 95% non condensing									
Altitude	1000m slm (1% derating every 100m up to 2000m)									
General										
Cooling	Forced air									
UPS efficiency	95,5%									
Overload	110% 1 hr, 120% 10 min, 150% 1 min, >150% 200ms									
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3									

AURIGA MS MODULAR UPS (450-900KVA)

AURIGA MS 450÷900kVA

Auriga MS modular UPS, special used to IDC data center, is a high-end product launched to market by Powertronix adopting "Energy saving, green, environmental protection" concept. It delivers the best combination of rectifier, filter, charger, inverter and intelligent power protection. Applying innovative current sharing rectifier control, master-slave synchronization in sequence control, multi-level decentralized control and 3-level sine wave modulation technology, it features great efficiency, flexibility and reliability; reduces the maintenance cost.

Auriga MS series is a new type modular UPS, which integrated digital technology and new semiconductor technology, can completely eliminate the impact of various grid problems on key loads. Adopting 75KVA power modules, it features high power density, reliable, high efficiency and intelligence, provides ideal power supply protection for customers' large and medium places.

FEATURES

· Adopting modular structure, composed of monitor module, bypass module, control module and power module in parallel, power module N+X redundancy, hot swappable;

· Parallel-capable up to 4sets UPS, meet N+1, 2N, ⊠ 2N requirements;

· In/out mode: 1/1, 1/3, 3/1, 3/3;

· All power modules share the batteries;

· Perfect battery management function: battery self-discharge function, auto-transfer between floating and equal charging, temperature compensation;

· Any module has balanced distribution function for input, output and charging power;

· Overall efficiency >96% (AC-AC), inverter efficiency>98% (DC-AC);

· Input THDI<3%;

· Input PF>0.99;

· Continuous current mode (CCM) is adopted for AC input to reduce interference to power grid (RFI/EMI);

· Appearance in accordance with industry specifications. Can meet the load-bearing requirements of ordinary buildings with small size and weight;

· Standard configuration with manual maintenance breaker, RS232, RS484/RS422 communication ports and remote monitor software. Option SNMP, SPD and input&output breaker;

· Multiple work mode: online, ECO, iECO mode;

· System has energy storage function.

LITHIUM BATTERY

· Battery core selection: square aluminum shell lithium iron phosphate battery, safety control starts from battery core selection;

· Module insulation design: cell gap is greater than 7mm, insulation ability complies with GB/T 16935.1 and IEC60664-1 standards, eliminating the risk of cell failure diffusion;

· Three-level safety protection design: fuses, circuit breakers and contactors to protect DC;

· BMS equalization technology: using energy transfer type passive (active is optional for special request) equalization control technology;

· BMS adopts three-level management system: module level, rack level, system level, providing perfect monitoring and protection functions;

· Small area covering and more space for servers;

· Large discharge rate, suitable for 5-15 minutes short-term backup of data center;

· Wide temperature range, reducing operating costs;

· Ampia gamma di temperature, riduce i costi di manutenzione;

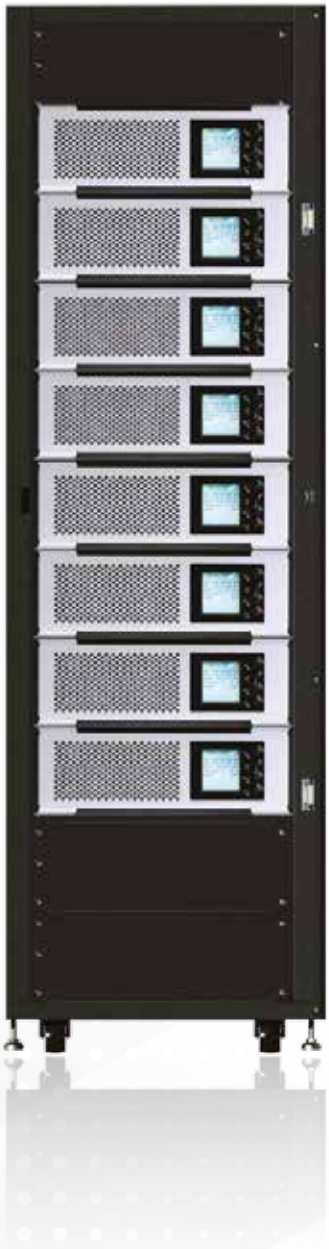
· Long life cycle, 4,500 cycles in 10 years.

Model	MS 240-450/75	MS 240-600/75	MS 240-900/75
Cabinet maximum power	450kVA	600kVA	900kVA
Accepted power module		DN75D	
Mains input			
Input mode		3PH+N+PE 1PH+N+PE	
Input voltage		380V/220V - 400V/230V - 415V/240V	
Input frequency		50Hz±5% 60Hz±5%	
Battery charging			
Charging profile		DIN 41733 temperature compensated	
Charging ability		8 hours to 90% capacity	
AC output			
UPS power factor		1	
Output voltage		380V/220V - 400V/230V - 415V/240V	
Output frequency		50Hz±0,01%(battery supply),60Hz±0,01(battery supply)	
Output voltage stability		±1%	
Voltage recovering		<20ms (load 0% to 100% change)	
Overload capability		10mins @125%, 60sec @150%	
Commutation bypass-inverter		0 time	
Peak factor		03:01	
Overall efficiency		≥96.5%	
Load share precision		97%	
Operation environment			
Ambient temperature		- 25°C ~ 60°C	
Operating temperature		- 5°C ~ 40°C	
Operation altitude		≤5000m, derating if altitude is more than 1000m	
Relative humidity		≤95% No condensation	
Protection degree		IP20	
Cooling		Cooling by Fans	
Safety standards		EN62040-1 / EN62040-2 / IEC60950	
Acoustic noise		≤68dB	
Width (mm)	800x1000x2000	1200x1000x2000	1800x1000x2000
Weight (kg)	320	480	730

Module technical specifications	
Power	75KVA
Input/Output Mode	3/3,3/1,1/1
THDI (%)	≤3%
Overload capacity	10mins @125%, 60sec @150%
Dimensions (HxWxD) mm	172x482x628
Peso (kg)	47.5

RACK INDIPENDENT SERIES

VECTOR RI UPS 10÷100kVA



Vector RI UPS is market most flexible, complete and scalable power protection solutions delivering premium VFI online double conversion for IT and electrical infrastructures in corporate, medical, banking and industrial applications. Vector RI UPS provides flexible form factor allowing standardization across multiple applications.

High power internal chargers allow virtually unlimited additional matching battery packs to comply with aggressive runtime demands of business-critical systems. Adopting PFC input IBGT based, separate battery charger, transformer-less inverter design Vector RI UPS offers high availability, flexibility and minimum total cost of ownership, delivering on-line double conversion protection in a versatile rack/tower format.

Based on rack indipendent concept design and modular capability feature, Vector RI UPS allows to provide the customer with a tailor made power solution up to 100kW and to enhance the multi UPS architecture management and monitoring as per single UPS system, via additional PTX multiUPS rack controller and LCD screen panel. To ease installation and maintenance procedures, UPS provides hot swappable terminal block, to remove from rack cabinet the power module only, without disconntecting UPS input/oputpout wiring.

Model		3/3-10K	3/1-10K	1/1-10K
Phase		3 phase in / 3 phase out	3 phase in / 1 phase out	1 phase in / 1 phase out
Capacity		10000 VA/ 10000 W		
Cabinet capacity		100KVA/100KW		
One power module capacity		10KVA/10KW		
Max power module no.		10		
Max battery set no.		10		
Input				
Nominal voltage		3x 360VAC/380VAC/400VAC/415 VAC (3Ph+N+PE)		208VAC/220 VAC/230VAC/ 240VAC (1Ph+N+PE)
Voltage range		190-520 VAC (3-phase) @ 50% load 305-478 VAC (3-phase) @ 100% load		110-300 VAC @ 50% load 176-276 VAC @ 100% load
Frequency range		40~70Hz		
Power factor		≥ 0.99 @ 100% load		
Output				
Output voltage		360VAC/380V AC/400VAC/41 5VAC (3Ph+N)	208*/220/230/240VAC (L+N)	
Regolazione della tensione CA		± 1%		
Frequency Range (Synchronized Range)		46~54Hz or 56~64Hz		
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz o 60 Hz ± 0.1 Hz		
Current Crest Ratio		3:1 (max.)		
Harmonic Distortion		≤ 2 % THD (Linear Load); ≤ 4 % THD (Non-linear Load)		≤3% (Linear Load); ≤5% (Non-linear Load)
Transfer time	AC Mode to Batt. Mode	zero		
	Inverter to bypass	zero		
Efficiency				
AC Mode		94%		93.5%
ECO Mode		97%		
Battery Mode		93.5%	93%	92.5%
Battery/charger				
Battery Numbers		16 ~ 20 pcs (adjustable) x 2		
Nominal Voltage		+/-192V (12V x 32 pcs)		
Maximum Voltage		+/- 240V (12V x 40 pcs)		
Minimum Voltage		+/-192V (12V x 32 pcs)		
Typical Recharging Time		9 hours recover to 90% capacity		
Charging Current		+/- 4A		
Indicators				
LCD/LED Display		UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions		
Physical				
Dimension, D X W X H (mm)		678 X 418 X 132		
Net Weight (kgs)		20.5		
Environment				
Operation Humidity		172x482x628		
Noise Level		Less than 55dB @ 1 Meter		
Management				
Smart USB		Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7/8, Linux and MAC		
Optional SNMP		Power management from SNMP manager and web browser		

*Derate capacity to 90% of capacity when the output voltage is adjusted to 208VAC..

**Product specifications are subject to change without further notice.

SINGLE-PHASE
UNINTERRUPTIBLE POWER SUPPLIES

The Antares PRO series is the Powertronix's single phase UPS family available in power ranges from 1kVA to 10KVA. With single-phase input and output it can be configured with different reserve capacities arranged in cabinets with measures similar to those of the UPS. It is possible to have them in a 19-inch tower or rack version.
It is suitable for powering IT loads or process controllers, as well as for storage systems, telephony equipment, both VoIP and traditional, and medical devices. The Antares Pro UPSs have been designed to meet the requirements of the CEI-016 standard, so they are the ideal solution for use in medium-voltage substations to power auxiliary loads.

The newly developed inverter is certainly one of the best energy conversion systems on the market, thanks to the high output power factor and the 94% efficiency in On Line operation.
In business continuity applications that require long battery running times, the autonomy can be extended to several hours using versions with a high-performance battery charger.

Powertronix has always been sensitive to energy saving and has introduced the possibility of programming the UPS switching on and off times to the Antares Pro series, in order to reduce consumption to zero during periods of prolonged inactivity.

It is possible to interface the unit to a computer, through a free software, or through an external SNMP agent (optional) for a complete monitoring via the internal network or internet.

The functions can be programmed via software or manually set via the screen, making this range of UPS very flexible and easy to use. Antares Pro offers maximum flexibility for integration with any communication system and for all operating systems and network environments. The supervision software and shut-down ViewPower, already included with the UPS, allows managing varied operating systems such as Windows 7, 2008, Vista, 2003, XP, Linux, Mac OS X, Sun Solaris, VMware ESX and other Unix releases. Each UPS is equipped with a serial port, a USB port and a slot for communication boards such as Modbus/Jbus, TCP/IP, SNMP and relay contacts.

The main features that identify the family are:
- Rack or tower installation
- Adjustable LCD
- Double conversion
- PFC input
- DSP Digital control
- Economic mode (ECO)
- Wide input voltage window
- Battery ignition
- USB and RS232 ports
- Optional ports: SNMP, Free Contacts, Modbus

Antares Pro Tower

From 1 to 10kVA

The Antares Pro line in tower configuration, available in the sizes 1.000, 2000, 3000, 6000 and 10.000VA, is characterised by an online double conversion technology which allows the inverter to be supplied with constant power, with a perfectly sinusoidal wave, thus guaranteeing maximum reliability.

Antares Pro can guarantee a high quality of the output voltage even with distorting loads and allows a high short circuit current on bypass and a 150% overload capacity.

Antares Pro Rack/Tower

From 1 to 10kVA

The Rack/Tower Antares line, available in the same sizes as the tower version, is the ideal solution for protecting servers and network devices. Antares Pro Rack can be installed free-standing on the floor in tower configuration or in 19" rack cabinets simply by extracting and turning the screen. It allows a high short circuit current on bypass and a 150% overload capacity.

Model	1K	2K	3K	6K	10K
Input					
Input nominal voltage	200/208/220/230/240Vac				
Input voltage range	145 VAC ± 5 % o 300 VAC ± 5 %				
Input frequency	Nominal: 50 or 60 Hz / Range: 40 ÷ 70 Hz				
Power factor	0.99				
Backfeed protection	on request				
Input current distorsion	≤ 3 % THD (linear load); ≤ 6 % THD (non linear load)				
Automatic Bypass					
Bypass nominal voltage	200/208/220/230/240VAC				
Bypass nominal frequency	50 or 60 Hz				
Output					
Output nominal power KVA	1	2	3	6	10
Output active power KW	0,9	1,8	2,7	5,4	9
Output nominal voltage	200/208/220/230/240Vac				
Output static voltage stability	± 1%				
Output dynamic voltage stability	± 5%				
Crest factor	3:1				
Output voltage distorsion (linear load)	≤ 3%				
Output nominal frequency	50Hz or 60Hz				
Output frequency stability	0.01%				
Battery					
Battery type	VRLA AGM o VRLA GEL				
Max charging current	1A	1A	1A	1 / 4A	
Battery charging profile	DIN 41733 Temperature compensated				
Communication					
Remote signals	Remote EPO				
Communication interface	Serial RS232				
Options	RS485 ModBus; SNMP/HTTP/MODBUS; AS-400				
Mechanical data					
Protection	IP 20				
Dimensions mm	282x145x220	397x145x220	421x190x318	369x190x668	442x190x668
Weight Kg	10	17	27	52	57
Noise at 1m dBA	<50dBA				
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)				
Working environment temperature	+20°C ÷ +40°C				
Relative humudity	95% non condensing				
Altitude	1000m slm (1% derating every 100m up to 2000m)				
General					
UPS efficiency	94%				
Overload	110% 10 min; 130% 1 min; >130% 30 sec				
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3				

Model	1K	2K	3K	6K	10K
Input					
Input nominal voltage	200/208/220/230/240Vac				
Input voltage range	145 VAC ± 5 % or 300 VAC ± 5 %				
Input frequency	Nominal: 50 or 60 Hz / Range: 40 ÷ 70 Hz				
Power factor	0.99				
Backfeed protection	on request				
Input current distorsion	≤ 3 % THD (linear load); ≤ 6 % THD (non linear load)				
Automatic Bypass					
Bypass nominal voltage	200/208/220/230/240VAC				
Bypass nominal frequency	50 or 60 Hz				
Output					
Output nominal power KVA	1	2	3	6	10
Output active power KW	0,9	1,8	2,7	5,4	9
Output nominal voltage	200/208/220/230/240Vac				
Output static voltage stability	± 1%				
Output dynamic voltage stability	± 5%				
Crest factor	3:1				
Output voltage distorsion (linear load)	≤ 3%				
Output nominal frequency	50Hz o 60Hz				
Output frequency stability	0.01%				
Battery					
Battery type	VRLA AGM o VRLA GEL				
Max charging current	1A	1A	1A	1 / 4A	
Battery charging profile	DIN 41733 Temperature compensated				
Communication					
Remote signals	Remote EPO				
Communication interface	Serial RS232				
Options	RS485 ModBus; SNMP/HTTP/MODBUS; AS-400				
Mechanical data					
Protection	IP 20				
Dimensions mm	310x438x2U	410x438x2U	630x438x2U	530x438x3U	580x438x3U
Weight Kg	4	8	8	15	20
Noise at 1m dBA	<50dBA				
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)				
Working environment temperature	+20°C ÷ +40°C				
Relative humudity	95% non condensing				
Altitude	1000m slm (1% derating every 100m up to 2000m)				
General					
UPS efficiency	94%				
Overload	110% per 10 minuti; 130% per 1 minuto; >130% per 30 secondi				
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3				

ENERCLEVER
BEYOND STORAGE.

Enter the world of intelligent source management.

Enerclever is a family of products which is highly customisable according to the specific needs of the individual user, born with the intent of providing a practical response to the growing need to reduce management costs, even up to 60%, by optimising energy flows.

What it looks like

It consists of an adequately sized battery pack and a UPS that we can define as intelligent, which, according to the indications, can be mono or bidirectional. Should there be a solar system present, Enerclever is flanked by an SBC (Solar Battery Charger) able to oversee the battery charge, coordinating the various sources in sync with the UPS.

Main fields of use

- In support of generators, it performs a peak levelling function by recovering and storing the excess energy in the battery pack and then delivering it appropriately during peak load requests.
- In order to manage the load by integrating and optimising the various sources of energy, favouring in each instance those at a lower cost. It allows the sun to be used as the primary source when available, to charge the batteries with the mains during off-peak hours when the cost is lower and in the absence of sun, and to use the energy stored during the hours when the network would be more expensive, thus resorting to activating one or more generators only for emergencies.
- To manage loads exceeding the mains availability. In many cases, it is therefore possible to avoid the need to install medium voltage substations by users with peaks above 100kW.

BID and UPS

Powertronix offers this family of products designed with the best technology available on the market, offering an efficiency of 98% to customers who wish to optimise their systems. By integrating one or more machines into the power supply system of one's organisation, it is possible to intelligently manage the energy required by the loads, always drawing it from the most convenient source at that moment, including the electricity grid, renewable sources or storage system.

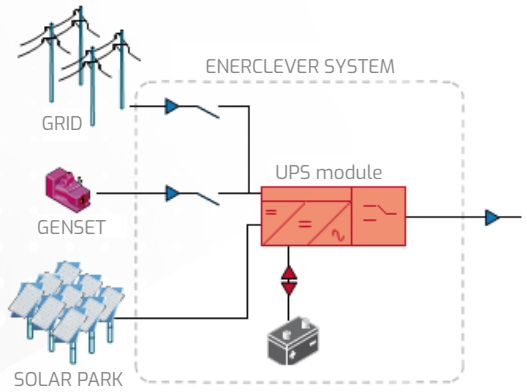
Energy Station

When an integrated solution for supplying energy to a remote location is required, or even to quickly solve the intelligent coordination of one's energy sources, Powertronix offers ready-to-use ad hoc solutions, built in IP54 containers.

BID and UPS

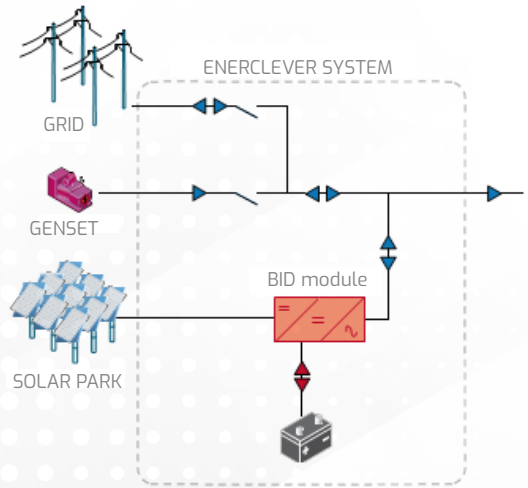
POWERTRONIX ENERCLEVER is the hybrid system that allows access to a continuous, less expensive and cleaner source of energy. The use of diesel generators is significantly reduced and when a renewable source is integrated, the savings become extraordinary. ENERCLEVER perfects pre-existing diesel generator installations, elevating the system to its highest levels of efficiency and savings.

There are two different configurations of the ENERCLEVER system which allow you to optimise or build systems for all needs:



System based on ENERCLEVER BID

- Batteries charged from renewable sources or from the mains
- Energy stored to save fuel or to obviate mains failures
- Optimisation of diesel system efficiency (reduced consumption and operating costs)
- Uninterrupted power supply
- Load balancing
- Island operation



System based on ENERCLEVER BID

- Improvement of network quality
- Power Factor Correction
- Reduction in harmonic content
- Island operation in the absence of a network
- Peak Levelling function
- Load Shaving function
- Dynamic management of diesel generators for cost optimisation

A broad power range up to 300KW per unit

ENERCLEVER solutions are available in power sizes from 50KW up to 300KW.

Model	ECBID050 ECUPS050	ECBID100 ECUPS100	ECBID150 ECUPS150	ECBID200 ECUPS200	ECBID250 ECUPS250	ECBID300 ECUPS300
AC values (Grid connected)						
Nominal voltage	3Ph+N 380/400/415V					
Nominal frequency	50 or 60 Hz					
Frequency range	40 ÷ 70 Hz					
Max slew rate	±1Hz/s					
Nominal power KVA	50	100	150	200	250	300
Power factor correction	0,6 ÷ 1					
AC values (Stand alone)						
Nominal power KVA	50	100	150	200	250	300
Active power KW	50	100	150	200	250	300
Nominal voltage	3Ph+N 380/400/415V					
Voltage static stability	± 1%					
Voltage dynamic stability	± 5%					
Crest factor	3:1					
Voltage distorsion (linear load)	≤ 1%					
Nominal frequency	50Hz o 60Hz					
Overload	125% 10 min					
Automatic Bypass (UPS)						
Nominal voltage	3Ph 380/400/415 V					
Nominal frequency	50 or 60 Hz					
DC values (solar panels)						
Configuration	External module IP65					
Power	30KW					
MPPT number	6					
DC values (battery)						
Battery type	VRLA AGM / VRLA GEL					
Communication						
Remote signals	Remote EPO - External ByPass					
Communication interface	Serial RS485 Modbus, Dry Contacts, Current signal					
Mechanical data						
Protection grade	IP 20					
Noice level 1 m	<62dBA			<64dBA		
Storing temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Battery)					
Working environment temperature	+20°C ÷ +40°C					
Relatice humidity	95% non condensing					
Altitude	1000m slm (1% derating every 100m up to 2000m)					
Cooling	forced air controlled speed					
General						
Topology	Multilevel bidirectional inverter					
Inverter	High frequency IGBT inverter transformerless					
Statich switch	Statich Switch SCR and contactor					
Cooling	forced air					
Efficiency	97,5%					
Standards	**Direttives**: LV 2006/95/CE Low Voltage Directive • EMC 2004/108/CE Electromagnetic Compatibility Directive **Standards**: Safety IEC EN 62040-1 • EMC IEC EN 62040-2 C2 • IEC 62040-3					

Energy Station

Off-grid energy station for intelligent energy management.
Solar energy and a generator unit optimised by a storage system. In a single solution, this product implements all the possible sources of energy which can be put in place to meet the typical needs of remote areas, not reached by public mains. The system integrates distribution panels on both the continuous and the alternating power sides, thus reducing time and costs for on-site implementation. It consists of independent modules which can be positioned and connected to form the system according to requirements.

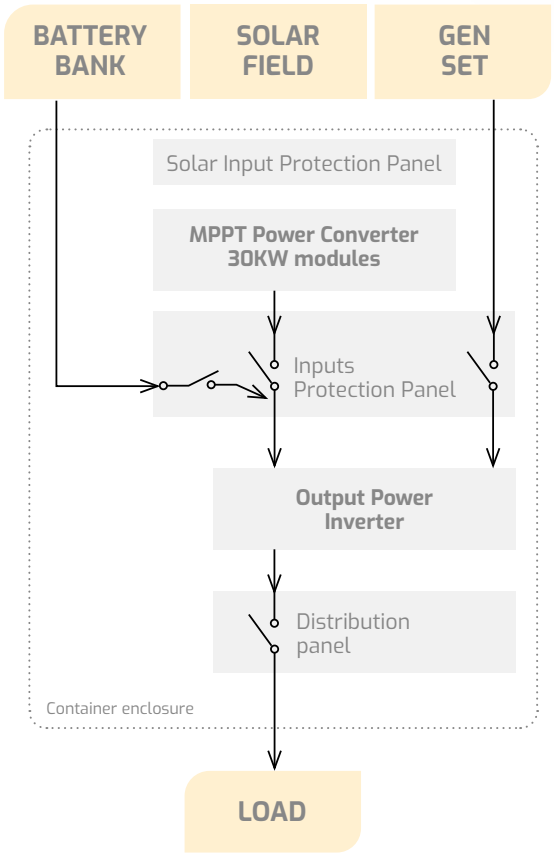
Key features:

Advantages:

- Integrated technologies
- Reliability
- Easy installation
- IP54 container for outdoor use
- High performance IGBT power equipment
- A broad DC input range for high flexibility of the photovoltaic field
- Optimised MPPT algorithm
- Advanced thermal design for harsh environments
- Compliance with international standards

Protections:

- DC disconnecting switch
- AC disconnecting switch
- AC/DC power surge protection
- AC/DC over voltage protection
- Real-time management of the load
- Over-temperature protection
- Protection against ventilation malfunction



Model	ES270100	ES480100	ES330160	ES780200
Solar Input (DC)				
Max. DC power	270 KWp	480 KWp	330 KWp	780 KWp
Max. input voltage	900 V			
Min. operating voltage	400 V			
Max operating voltage	850 V			
Max. input current	600A	1070 A	733 A	1733 A
MPPT voltage range	500 ~ 850 V			
Number of DC cabinet input terminals	54 ×2	96 x2	66 x2	156 x2
Genset Input (AC)				
Max. AC power	160 KW		200 KW	
Max. input voltage	900 V			
Min. operating voltage	400 V			
Max operating voltage	850 V			
Max. input current	600 A	1070 A	733 A	1733 A
MPPT voltage range	500 ~ 850 V			
Number of DC cabinet input terminals	54 ×2	96 x2	66 x2	156 x2
Output (AC)				
Rated power	100 KW		160 KW	
Max. AC output power	160 KW		200 KW	
Max. output current	240 A		290 A	
Accepted inverter overload	125% for 10 minutes			
Current distortion	< 1%			
Rated voltage	380/400/415 V			
Static output voltage stability	±1%			
Dynamic output voltage stability	±5%			
Rated frequency	50 Hz / 60 Hz (settable)			
Frequency occuracy	0,005 Hz			
Isolation transformer	Optional			
Efficiency				
Max. conversion efficiency (DC to AC)	96.4%			
Max. conversion efficiency (AC to AC)	97.5%			
Others				
Communications	RS485, DryContacts			
Altitude	3000 m (> 1000 m derating)			
Cooling	Temperature control forced-air cooling			
IP rating	IP 54			
Relative humidity	0 ~ 95% non-condensing			
Ambient temperature	-25°C ~ +55°C			
Dimensions	20 feet container	40 feet container	40 feet container	40 feet container

Single branch SCR

MAIN FEATURES
- Power device: SCR
- Control type: control phase
- Incoming isolation transformer at mains frequency
- Electrostatic shield
- Microprocessor supervision
- LCD with backlit alphanumeric display and led status
- Charging curve for each battery type
- High effeciency
- High reliability
- Easy maintenance with access from the front
- Low output ripple
- Extended frequency input range
- Automatic and manual battery test
- Earthed polarity sensor with differentiated LED
- Output overload indication
- Acknowledgeable audible alarm

LED STATUS
- AC/DC ok
- Boost charge (optional)
- Manual charge (optional)
- Maximum output voltage
- Negative pole to earth
- Positive pole to earth
- Output overload
- Battery test failed
- Power supply via batteries
- Low battery voltage
- End battery autonomy
- System maintenance request

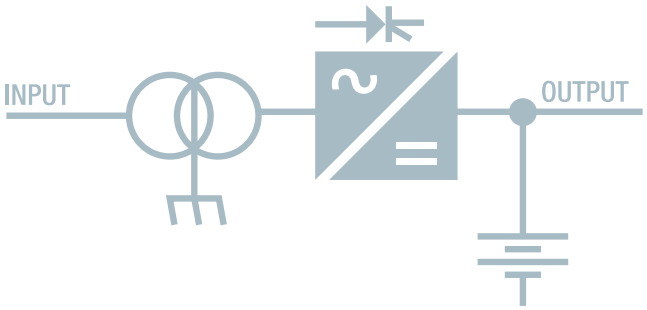
ELECTRICAL MEASUREMENTS ON LCD
- Output voltage
- Output current
- Current batery recharge (optional)
- Countdown (seconds) to the end of battery test

MULTIFUNCTION PUSH-BUTTON
- Acknowledgeable audible alarm
- Alarms reset
- Led test
- Manual battery test

SPECIAL FUNCTIONS ON BOARD
- Manual and automatic battery
- DC earth with +/- polarity leds
- Overload detection

APPLICATION FIELDS
- Oil & Gas
- Energy management and production
- Process control
- Transport
- Security

OPTIONS
- Input, output and battery automatic switch
- uP card for boost and manual charge functions
- uP card for temperature compensation function
- End battery discharge power contactor
- Temperature probe
- Coil circuit breaker tripping
- Auxiliary circuit breaker contact
- Field Bus Interface (only state, no measures)
- Battery reverse control (BRPCU)
- E.P.O (Emergency Power Off) device
- LCD kit in order to measure battery recharge current



Model	CMP1R024S	CMP1R048S	CMP1R110S	CMP1R220S
Output				
Nominal voltage	24	48	110	220
Current range	60 ÷ 500A		60 ÷ 250A	
Max power (W)	12000	24000	55000	55000
Ripple noise (RMS)	≤ 1% Vn			
Adj. output voltage range	+/- 5%			
Stability	+/- 1%			
Adj. following Vin change	+/- 1%			
Adj. following load change	+/- 1%			
Start-up time	10 sec			
Input				
Nominal voltage	400 +/-10%			
Current curve	50 ÷ 60 +/-5%			
Efficiency (Typ.)	≥ 90 %			
Isolation I/O	4kV with transformer			
Protections				
Sequence sense	Shut down. Automatic restart after phase correction			
Incoming low voltage	Shut down. Restart down if Vin<325VAC Vin>330VAC			
Overvoltage	+10%Vn			
Undervoltage	- 50% Vn			
Overtermperature	Shutdown. Automatic restart after temperature normalization			
Alarms				
Contacts (8Amp/250VAC)	AC/DC operating General fault Battery test failed Low battery voltage DC earth			
Environment				
Operating temperature	-10+40°C			
Operating humidity	20-90% (NO COND.)			
Storage temperature	-20+50°C			
Standards				
Marking	CE			
Protection degree	IEC 60529			
EMC	EN 61000-6-2 EN 61000-6-4			
Static converter	EN 60146-1-2			
Protection degree (front panel closed)	IP 30			
Color	RAL 7035			

Single branch IGBT

MAIN FEATURES
- Power device: IGBT
- Control type: high frequency PWM
- Incoming isolation transformer at mains frequency
- Electrostatic shield
- Microprocessor supervision
- LCD with backlit alphanumeric display and led status
- Charging curve for each battery type
- High effeciency
- High reliability
- Easy maintenance with access from the front
- Low output ripple
- Extended frequency input range
- Automatic and manual battery test
- Earthed polarity sensor with differentiated LED
- Output overload indication
- Acknowledgeable audible alarm

LED STATUS
- AC/DC ok
- Boost charge (optional)
- Manual charge (optional)
- Maximum output voltage
- Negative pole to earth
- Positive pole to earth
- Output overload
- Battery test failed
- Power supply via batteries
- Low battery voltage
- End battery autonomy
- System maintenance request

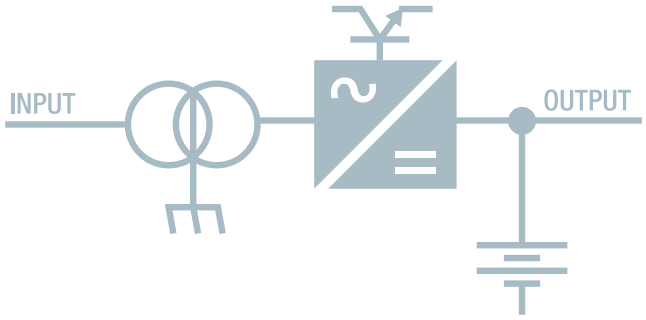
ELECTRICAL MEASUREMENTS ON LCD
- Output voltage
- Output current
- Current battery recharge (optional)
- Countdown (seconds) to the end of battery test

MULTIFUNCTION PUSH-BUTTON
- Acknowledgeable audible alarm
- Alarms reset
- Led test
- Manual battery test

SPECIAL FUNCTIONS ON BOARD
- Manual and automatic battery
- DC earth with +/- polarity leds
- Overload detection

APPLICATION FIELDS
- Oil & Gas
- Energy management and production
- Process control
- Transport
- Security

OPTIONS
- Input, output and battery automatic switch
- uP card for boost and manual charge functions
- uP card for temperature compensation function
- End battery discharge power contactor
- Temperature probe
- Coil circuit breaker tripping
- Auxiliary circuit breaker contact
- Field Bus Interface (only state, no measures)
- Battery reverse control (BRPCU)
- E.P.O (Emergency Power Off) device
- LCD kit in order to measure battery recharge current



Model	CMP1R024I	CMP1R048I	CMP1R110
Output			
Nominal voltage	24	48	110
Current range with 1Ph supply	10 ÷ 60A		
Current range with 3Ph supply	10 ÷ 100A		
Ripple noise (RMS)	≤ 0.5% Vn		
Adj. output voltage range	+/- 5%		
Stability	+/- 1%		
Adj. following Vin change	+/- 1%		
Adj. following load change	+/- 1%		
Start-up time	2 secs		
Input			
Nominal voltage	230 +/- 10% 400 +/- 10%		
Current curve	constant		
Efficiency (Typ.)	≥ 90 %		
Isolation I/O	4kV with transformer		
Protections			
Overload	2In x 5mS shut down for 250mS – automatic restart		
Current type	constant		
Overvoltage	+10%Vn		
Undervoltage	- 50% Vn		
Overtermperature	Shut down. Automatic restart after temperature normalization		
Alarms			
Contacts (8Amp/250VAC)	AC/DC operating General fault Battery test failed Low battery voltage DC earth		
Environment			
Operating temperature	-10+40°C		
Operating humidity	20-90% (NO COND.)		
Storage temperature	-20+50°C		
Standards			
Marking	CE		
Protection degree	IEC 60529		
EMC	EN 61000-6-2 EN 61000-6-4		
Static converter	EN 60146-1-2		
Protection degree (front panel closed)	IP 30		
Color	RAL 7035		

Double branch SCR

MAIN FEATURES
- Power device: SCR
- Control type: control of phase
- Incoming isolation transformer at mains frequency
- Electrostatic shield
- Microprocessor supervision
- LCD with backlit alphanumeric display and led status
- Charging curve for each battery type
- High effeciency
- High reliability
- Easy maintenance with access from the front
- Low output ripple
- Extended frequency input range
- Automatic and manual battery test
- Earthed polarity sensor with differentiated LED
- Output overload indication
- Acknowledgeable audible alarm

LED STATUS
- Mains status
- Rect. SB operating
- Rect BC operating
- Boost charge activated (optional)
- Manual charge activated (optional)
- Minimum and maximum SB voltage
- Minimum and maximum BC voltage
- Overload
- DC earth
- Battery mode
- Low battery voltage
- End battery autonomy
- System maintenance request

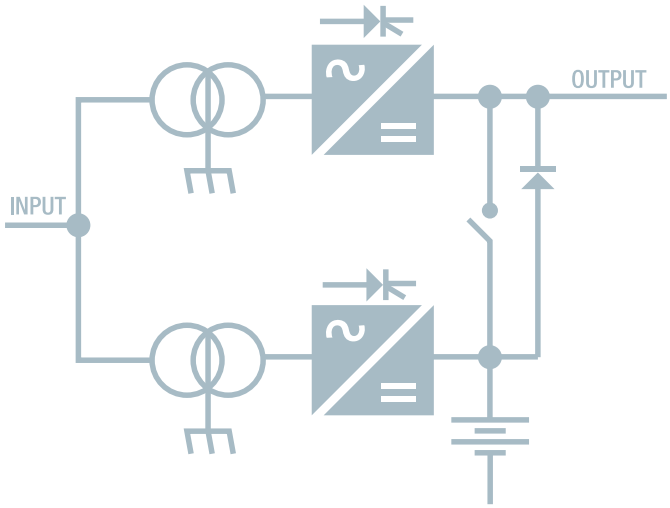
ELECTRICAL MEASUREMENTS ON DISPLAY
- SB output voltage
- SB output current
- BC batteries charging voltage
- BC batteries charging current

MULTIFUNCTION BUTTON
- Acknowledgeable audible alarm
- Alarms reset
- Test LED activationt

SPECIAL FUNCTIONS ON BOARD
- DC earth device with +/- polarity LEDs
- Overloading detection

APPLICATION FIELDS
- Oil & Gas
- Energy management and production
- Process control
- Transport
- Security

OPTIONS
- Input, output and battery automatic switch
- uP card for boost and manual charge functions
- uP card for temperature compensation function
- End battery discharge power contactor
- Temperature probe
- Coil circuit breaker tripping
- Auxiliary circuit breaker contact
- Field Bus Interface (only state, no measures)
- Battery reverse control (BRPCU)
- E.P.O (Emergency Power Off) device
- LCD kit in order to measure battery recharge current



Model	CMP2R024S	CMP2R048S	CMP2R110S	CMP2R220S
Output				
Nominal voltage	24	48	110	220
Current range	60 ÷500A			60÷250A
Maximum power (W)	12000	24000	55000	55000
Ripple noise (RMS)	≤ 0.5% Vn			
Adj. output voltage range	+/- 5%			
Stability	+/- 1%			
Adj. following Vin change	+/- 1%			
Adj. following load change	+/- 1%			
Start-up time	10 secs			
Input				
Voltage range	400 +/- 10%			
Current curve	50 ÷60 +/-5%			
Efficiency (Typ.)	≥ 90 %			
Isolation I/O	4kV with transformer			
Protections				
Sequence sense	Shut down. Automatic restart after phase correction			
Incoming low voltage	Shut down. Restart down if Vin < 325VAC Automatic restart if Vin > 330VAC			
Overvoltage	+10%Vn			
Undervoltage	- 50% Vn			
Overtermperature	Shut down. Automatic restart after temperature normalization			
Alarms				
Contacts (8Amp/250VAC)	AC/DC operating General fault Battery test failed Low battery voltage DC earth			
Environment				
Operating temperature	-10+40°C			
Operating humidity	20-90% (NO COND.)			
Storage temperature	-20+50°C			
Standards				
Marking	CE			
Protection degree	IEC 60529			
EMC	EN 61000-6-2 EN 61000-6-4			
Static converter	EN 60146-1-2			
Protection degree (front panel closed)	IP 30			
Color	RAL 7035			

Double branch IGBT

MAIN FEATURES
- Power device convertion: IGBT
- Control type: high frequency PWM
- Incoming isolation transformer at mains frequency
- Electrostatic shield
- Microprocessor supervision
- LCD with backlit alphanumeric display and led status
- Charging curve for each battery type
- High effeciency
- High reliability
- Easy maintenance with access from the front
- Low output ripple
- Extended frequency input range
- Earthed polarity sensor with differentiated LED
- Output overload indication
- Acknowledgeable audible alarm

LED STATUS
- Mains status
- Rect. SB operating
- Rect BC operating
- Boost charge activated (optional)
- Manual charge activated (optional)
- Minimum and maximum SB voltage
- Minimum and maximum BC voltage
- Overload
- DC earth
- Battery mode
- Low battery voltage
- End battery autonomy
- System maintenance request

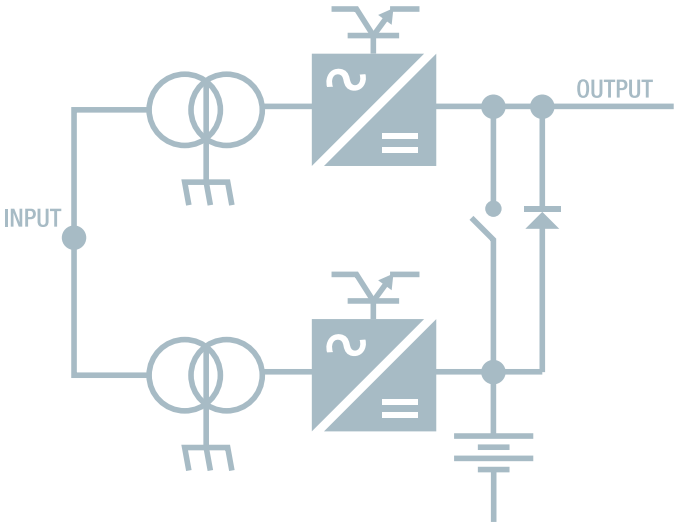
ELECTRICAL MEASUREMENTS ON DISPLAY
- SB output voltage
- SB output current
- BC batteries charging voltage
- BC batteries charging current

MULTIFUNCTION BUTTON
- Acknowledgeable audible alarm
- Alarms reset
- Test LED activation

SPECIAL FUNCTIONS ON BOARD
- DC earth device with +/- polarity LEDs
- Overloading detection

APPLICATION FIELDS
- Oil & Gas
- Energy management and production
- Process control
- Transport
- Security

OPTIONS
- Input, output and battery automatic switch
- uP card for boost and manual charge functions
- uP card for temperature compensation function
- End battery discharge power contactor
- Temperature probe
- Coil circuit breaker tripping
- Auxiliary circuit breaker contact
- Field Bus Interface (only state, no measures)
- Battery reverse control (BRPCU)
- E.P.O (Emergency Power Off) device
- LCD kit in order to measure battery recharge current



Model	CMP2R024I	CMP1R048I	CMP1R110
Output			
Nominal voltage	24	48	110
Current range with 1Ph supply	10 ÷ 60A		
Current range with 3Ph supply	10 ÷ 100A		
Ripple noise (RMS)	≤ 0.5% Vn		
Adj. output voltage range	+/- 5%		
Stability	+/- 1%		
Adj. following Vin change	+/- 1%		
Adj. following load change	+/- 1%		
Start-up time	2 secs		
Input			
Nominal voltage	230 +/- 10%		400 +/- 10%
Current curve	50 ÷ 60 +/-7%		
Efficiency (Typ.)	≥ 90 %		
Isolation I/O	4kV with transformer		
Protections			
Overload	2In x 5mS shut down for 250mS – automatic restart		
Current type	constant		
Overvoltage	+10%Vn		
Undervoltage	- 50% Vn		
Overtermperature	Shut down. Automatic restart after temperature normalization		
Alarms			
Contacts (8Amp/250VAC)	AC/DC operating General fault Battery test failed Low battery voltage DC earth		
Environment			
Operating temperature	-10+40°C		
Operating humidity	20-90% (NO COND.)		
Storage temperature	-20+50°C		
Standards			
Marking	CE		
Protection degree	IEC 60529		
EMC	EN 61000-6-2 EN 61000-6-4		
Static converter	EN 60146-1-2		
Protection degree (front panel closed)	IP 30		
Color	RAL 7035		

CMP-R series

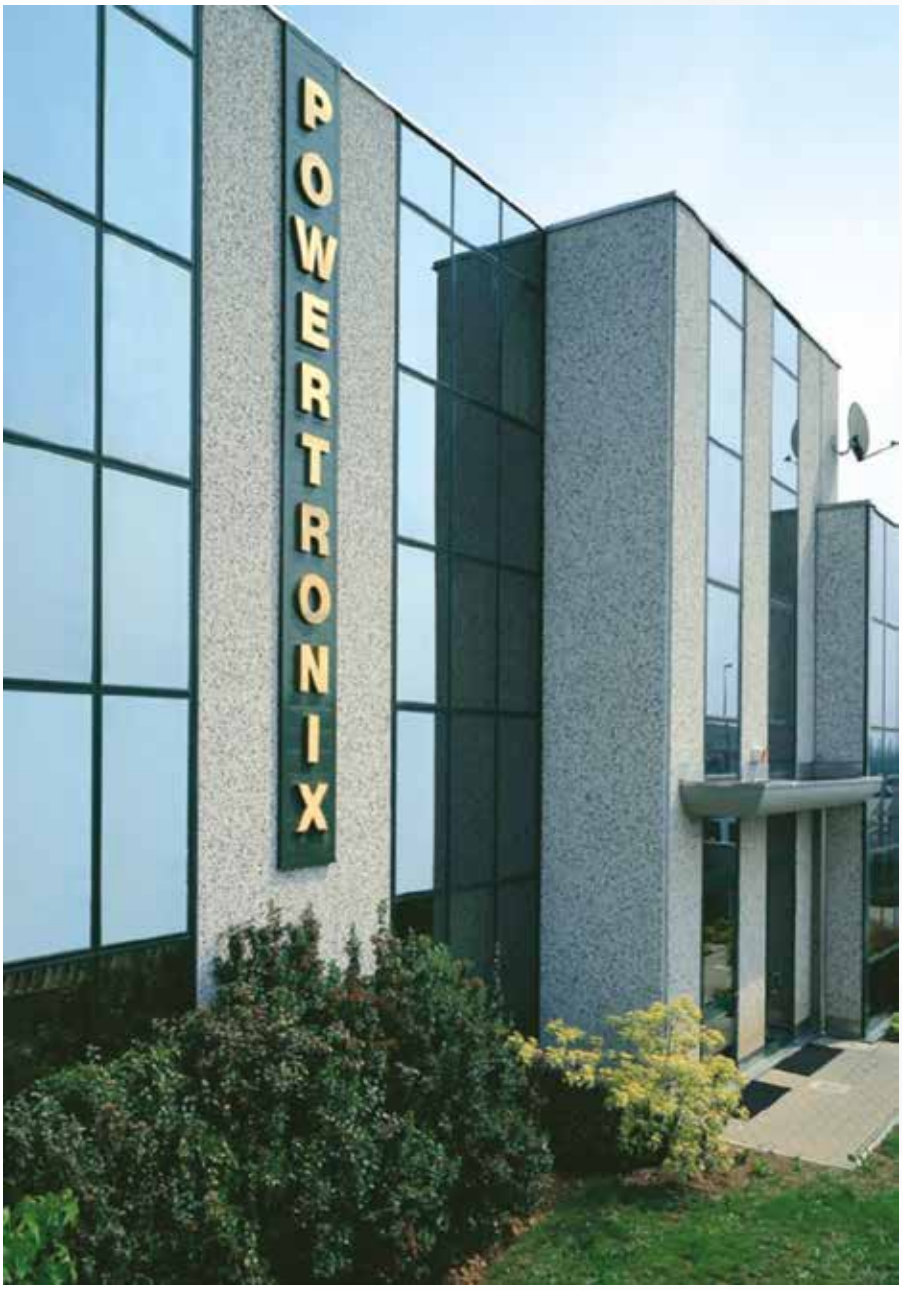
The CMP-R series represents the ideal solution for powering direct current loads while keeping the battery in buffer charge. The AC input can be single-phase or three-phase (optional). They are 1 branch current rectifiers (full buffer), switching technology in N + 1 configuration, for VRLA hermetic batteries.

Rated output voltage 24, 48, 110Vdc up to 20kW
For industrial applications
- Transformer station
- Substations
- Telecommunications
- LV and MV switchboards
- Automation

TECHNICAL FEATURES

- Switching technology
- N + 1 configuration
- Electronic stabilization of the output voltage, regardless of the supplied current to the load, or of the voltage and frequency of the mains
- Max current control both towards the loads and the battery (double current limitation)
- Hot swappable modules
- P.F. up to 0.99%
- Protection against overloads and short circuits

Model	CMPR2U024	CMPR4U024	CMPR2U048	CMPR4U048	CMPR2U110	CMPR4U110
AC Input						
Connections	1PH + N + PE (opzional 3PH+N+PE)					
Nominal Voltage	230Vac (opzional 400Vac)					
Accepted voltage range at full load (PH-N)	75 - 300 VAC					
Frequency	50-60Hz +/-5%					
Internal protection	In case of input voltage out of range, alarm triggers and rectifier turns off. In case of overcurrent, alarm triggers and internal fuse trips.					
Main terminal blocks	10 mm2					
Nominal current (for each module)	7,3A		10,5A		9,6A	
Maximum current (for each module)	18A		18A		18A	
Inrush current (for each module)	18A		18A		18A	
DC Output						
Nominal Voltage	24Vdc		48Vdc		110Vdc	
Voltage range	21 -31Vdc		42 - 58Vdc		97 - 132Vdc	
Voltage stability	< 1%					
Ripple	< 0,1%					
Maximum current for each module	70A		50A		20A	
Maximum power for each module	1680W		2400W		2200W	
Number of rectifiers	Max 3	Max 7	Max 3	Max 7	Max 3	Max 7
Maximum current for each rack	210A	490A	150A	350A	60A	140A
Maximum power for each rack	5040W	11760W	7200W	16800W	6600W	15400W
Power with redundancy	3360W	10080W	4800W	14400W	4400W	13200W
Battery						
Number of indipendent batteries	1	2	1	2	1	2
Charge profile	DIN 41773					
Technology	VRLA					
Load distribution panel						
panel 19" 4U	optional max 20 poles 63A					
User interface						
Operator	LCD					
BMS	free contacts (mains failure, summary alarm)					
General						
Isolation	input/output and output/ground					
Cooling	Forced ventilation					
Protection	IP 20					
User interface	LCD					
Color	RAL 7024					
Dimensions	19" x 2U x 400mm	19" x 4U x 400mm	19" x 2U x 400mm	19" x 4U x 400mm	19" x 2U x 400mm	19" x 4U x 400mm
Operating temperature	-10/+45°C					
Maximum humidity	97% relative humidity, non-condensing					
Maximum altitude	1000m msl without derating					
Safety	IEC/EN 60950-1					
Standards of electromagnetic compatibility	Emissions: IEC/EN 61000-6-4 Immunity: IEC/EN 61000-6-2 Harmonic currents IEC/EN 61000-3-2 Voltage fluctuation & flicker: IEC/EN 61000-3-3					
Options	SNMP Detachment of the load for minimum battery voltage Execution in cabinet					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