

EverExceed[®]
power your applications



Industrial UPS



Industrial UPS

Industrial UPS are regarded as fully customized power supply systems for rugged environments and designed particularly to safeguard critical loads in industrial applications where voltage transients, created by degraded mains supply, can seriously damage both UPS and the critical load.

Industrial UPS Systems are fully flexible and customizable and designed for active-on line installation between the power source, by-pass source and critical load where the inverter delivers regulated AC voltage and frequency to the load and rectifier delivers regulated DC voltage / current to the DC load at all times without interruption.

The power conversion process isolates the critical load from the normal mains disturbances and isolates the mains from load induced reflected harmonics affecting other loads connected to the input mains feeder. The rectifier converts AC power into DC to charge lead acid or nickel cadmium batteries; it also provides the necessary DC for continuously rated capacity of the inverter. IGBT semiconductor modules are used in PWM inverter and the control logic creates the precise sinusoidal output waveform with a very low harmonic content. Thyristor semiconductor modules are also used in rectifier for reliable operation.

The system consists of rectifier / charger, inverter, static bypass, maintenance bypass, rectifier isolation transformer, inverter isolation transformer, bypass line isolation transformer, automatic line stabilizer, DC distribution, AC distribution, controls and monitoring. The AC output of the inverter is connected to the critical load, the storage battery is connected between the inverter input and rectifier / charger output through a battery isolation MCB. The normal AC input power is connected to the rectifier; the bypass circuit also takes power from the same power source to provide power for the critical load during bypass operation when the system is in maintenance mode.

EverExceed Industrial UPS Systems are widely used in different industries such as Power Generation, Power Distribution, Power Transmission, Manufacturing, Transportation, Mining, Refining, Petrochemical Plants, Oil & Gas, Hospitals, Airports with different applications such as Gas Turbine Control, Switchgear tripping, Signalling, Alarms, Emergency Lighting, DCS (Distributed Control System) etc.



Industrial Automation

- Process Control Equipment;
- Motion (digital drives and robotics);
- Transport Automation;
- Airport automation;
- Railways and Road transport automation and ticket booking.



Building Automation

- Access Control;
- Security System;
- Fire Alarm System.



Power System

- Substation and hydropower plant;
- Chemical plants;
- Oil and Gas and petrochemical industries.



Medical Diagnostics

- Magneto Resonant Imaging;
- CT Scanning/Cath Lab;
- Multiple medical imaging units.

Feature

Adopting Microprocessor Controlled System

Adopting voltage and current stepping technology under CPU control, the rectifier of UPS has a soft start function. The input step is less than 15 seconds (adjustable), and the maximum impact current on the power grid does not exceed the rated current. The interference to the power grid is very small, which is quite beneficial for large-scale UPS applications and occasions where generator sets are used as backup power sources.

Advanced BMS

Intelligent battery management, extending battery lifetime 30%-50%, Comprehensive charge and discharge management of batteries, including voltage and current limiting charging, supplementing charging voltage based on environmental temperature, determining discharge cut-off voltage based on discharge current, and regularly detecting battery status for 200 hours.

Strong Impact Ability

Adopting pulse by pulse technology to ensure that the maximum short-circuit current does not exceed the allowable range of single pulse short time IGBT, a pulse by pulse current limiting scheme is adopted.

Integrated design

the entire machine adopts a less fuse design, using circuit breakers, contactors, and electronic static switches. The circuit protection technology is advanced, greatly improving the reliability of the entire machine.

High Reliability

Built in input isolation transformer, output isolation transformer and bypass isolation transformer realize complete Galvanic isolation. Instead of discrete IGBT and SCR components, PowerChampion UPS use Modular IGBT and SCR in Rectifier and Inverter, bring in extremely high reliability.

Flexible customization

Industrial UPS can be customized according to the customer's usage environment, including input and output voltage, phase, frequency, battery voltage and IP level of the cabinet, etc; And the charging current can be customized according to customer needs, which is very flexible.

Suitable for harsh environments

It can be applied in harsh environmental conditions such as dust, pests, high temperature conditions, and earthquake areas to protect your important production processes and systems.

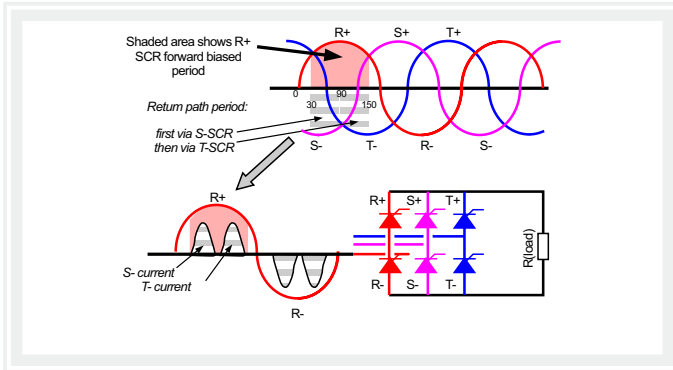
Parallel operation

Advanced distributed active parallel technology can realize parallel operation of 6PCS.

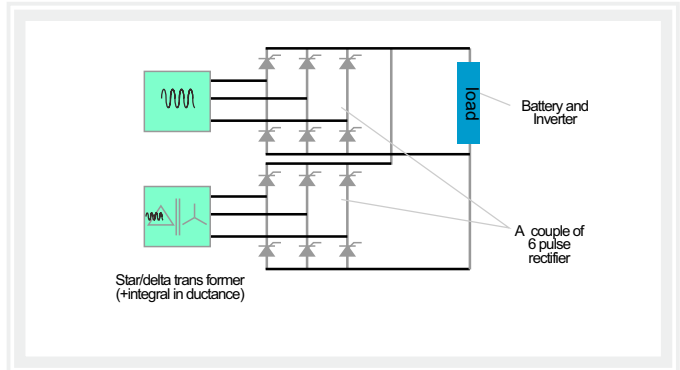


Functional principle & advantages

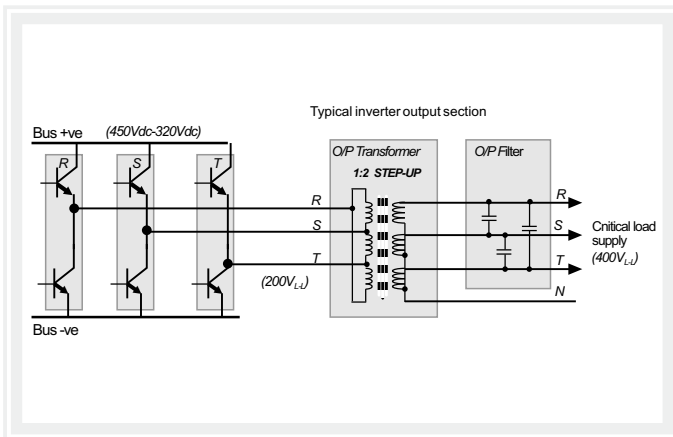
Functional operation Principle - Rectifier design-6 pulse SCR rectifier



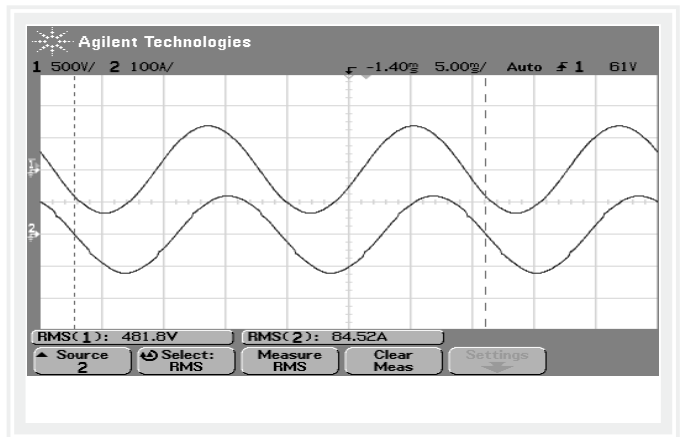
Functional operation Principle - Rectifier design-12 pulse SCR rectifier



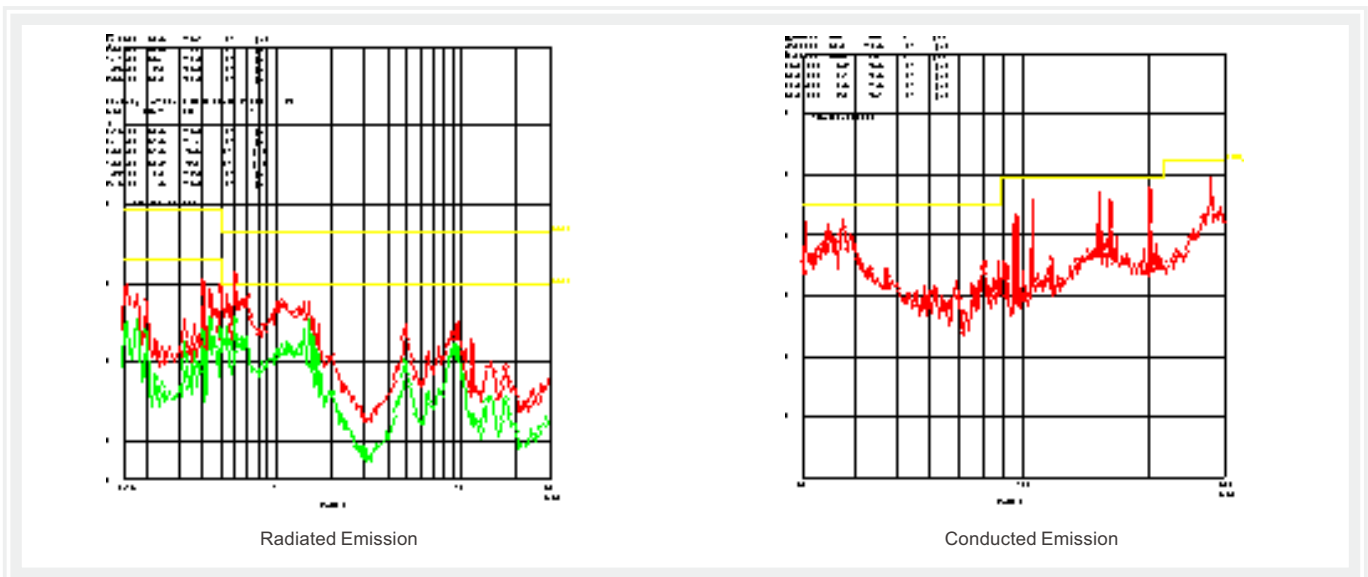
Functional operation Principle - Inverter design



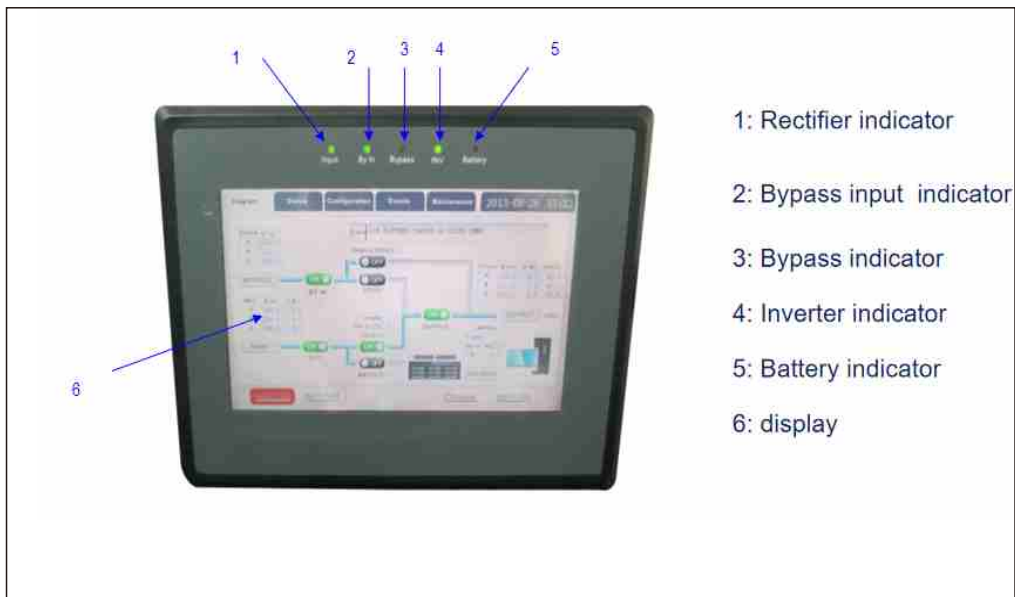
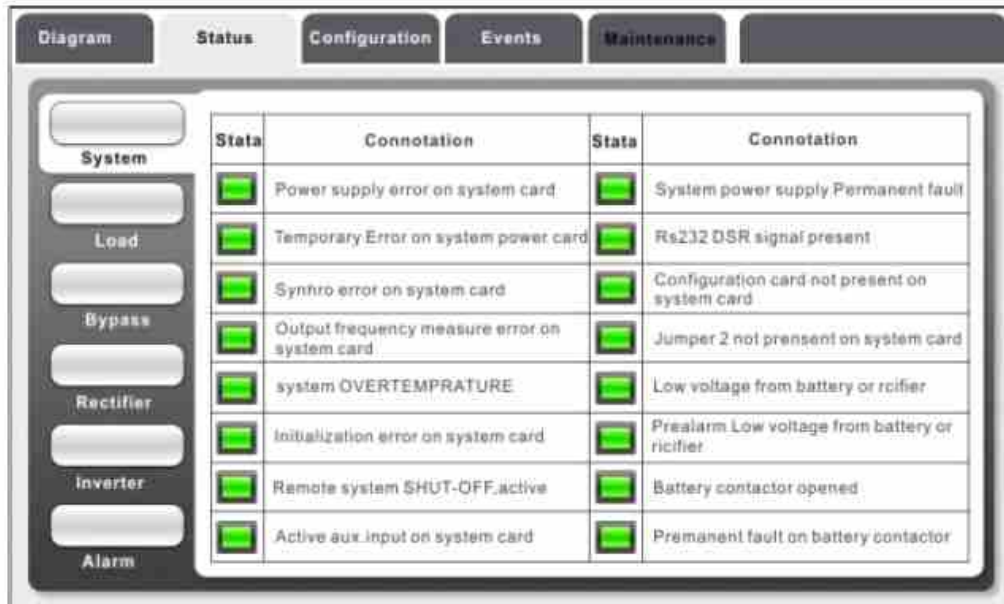
Advantage - Pure sine wave output voltage



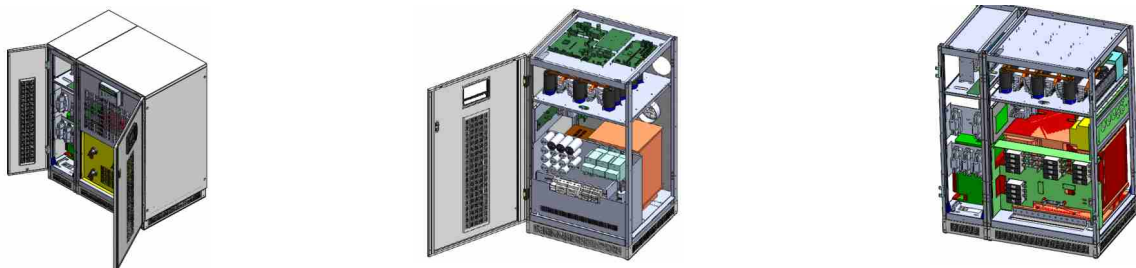
Advantage - High EMC Performance



Touch screen



Appearance design



Power Champion Series

GENERAL	
Model	PW10
Capacity	10kVA
Topology	Double conversion online system with output isolation transformer
Control	Microprocessor controlled system
RECTIFIER	
Isolation Transformer (OPTIONAL)	Galvanically isolated
Nominal Input Voltage	380 VAC / 400 VAC / 415VAC ±15% (3 phase+N)
Nominal Input Frequency	50Hz / 60Hz ±5%
Input PF	≥ 0.9Inductive (12 Pulse)
Total Harmonic Distortion (THDi)	≤ 10% (12 Pulse)
BATTERY	
Nominal DC Voltage	192VDC
Battery Charging Principle	Constant Current / Constant Voltage
Boost Charge Voltage (V/Cell)	2.4 Lead Acid Battery; 1.60 NiCd Battery (Based on battery brand and type)
Float Charge Voltage (V/Cell)	2.23 Lead Acid Battery; 1.40 NiCd Battery Based (Based on battery brand and type)
INVERTER	
Topology	3 Full bridge 6 high frequency IGBT inverter modules (3 Phase); 1 Full bridge 2 high frequency IGBT inverter modules (1 Phase)
Isolation Transformer	Galvanically isolated (standard)
Power Factor	0.8
Nominal Output Voltage	220 VAC / 230 VAC / 240 VAC ±15% (1 phase)
Voltage Tolerance Static	± 1%
Dynamic with 100% Load Change	± 10% in 50 msec.
Overload	100%-110%, 5 hours 110%-125%, 10 min 125%-150%, 1 sec
Waveform	Pure sinusoidal
Total Harmonic Distortion (THDv)	< 3%, at linear load <5%, at non-linear load
Crest Factor	3 : 1 (1 second)
Nominal Output Frequency	50 Hz / 60 Hz ±0.1%
Switching Frequency	16 kHz/ 8kHz /4kHz(Different power, Different frequency)
STATIC BY-PASS	
Topology	Uninterruptible static switch with back-feed protection
Bypass System	No break semiconductor thyristor – thyristor
Isolation Transformer (Optional)	Galvanically isolated 50/60 Hz ± 2%
Inverter / Bypass Transfer Time	Inverter failure: Max. 5 msec. Overload or manual transfer: 0 msec. Bypass/Inverter transfer time: < 4 msec.
MECHANICAL BY-PASS	
Topology	Make before break mechanical switch with locking system

Power Champion Series

SYSTEM	
Efficiency	AC mode: 90% Battery mode: 92% ECO mode: 99%
MCCB and Fuse	Input MCCB, Output MCCB, Battery fuse, Bypass MCCB, Maintenance bypass MCCB, Battery MCCB (Optional) (Small capacity UPS using MCB)
Measurements	LCD display for line voltage / frequency / current ,battery voltage / current, battery soc , Output voltage / frequency / current
Protections	Input: input high voltage, input low voltage, input frequency failure,phase sequence fault (3 phase), Soft start, over temperature protection battery: I-c filters, charge current limited Output: short circuit protection, over voltage protection, under voltage protection, over current protection, over temperature protection
LCD Alarm	Disturbances on bypass line, by-pass manual, Maintenance bypass MCCB close, cable defect in parallel, Bypass voltage failure, bypass MCCB open, SCR fuse failure, mains voltage failure, Input frequency error, Input MCCB open, battery low voltage, battery discharge, battery MCCB open, Output overload, Internal fault (Including auxiliary power supply, IGBT, SCR and other internal circuits)
Alarm Contacts	Low battery, mains input normal / failure, charger failure, overtemperature, Charger overvoltage, load mcb on/ off, battery mcb on / off, earth fault(optional);
Adjustable Parameters	Battery number, boost charge voltage, float charge voltage, Battery charge current, battery ending voltage, password;ups mode (ups, eco, bypass inhibit), dc cut off, low battery level, Output voltage adjustment, auto start on/off, date, alarm sound on/off, password
Communication	RS 485 / RS 232(standard) / (OPTIONAL) ethernet ports, modbus, profibus, SNMP, TCP/IP
Paralleling (OPTIONAL)	Parallel redundancy
SAFETY & ENVIRONMENT	
Electrical Standards	IEC 62040-3 (Performance), EN 50091-1 (Security) / EN 50091-2 (EMC)
Over Voltage Protection	IEEE 587 4500 A, 110 joules (standard) / 40kA surge arrestor (OPTIONAL)
Electrical Interference Reduction	FCC part 15 class B
Protection Level / Color	Parallel redundancy
Communication	IP54 / RAL 7035
Enclosure Material	The side panel is 2mm, the door panel is 2.5mm, and the base frame is 3mm;
Cooling	Forced fan (standard)
Cable Entry	Bottom (standard) / top (optional)
Heater & Lighting	Optional
Distribution	MCB 10A * 10 channels; (Switch brand: Schneider)
MTBF	200,000 hrs. (without battery group)
Operating Temperature	-10 / +40 °C. (Higher operating temperatures are available, please consult)
Relative Humidity	0 – 95 %(non-condensing)
Operating Altitude	Max. 4000 Mt. (Higher altitudes requires de-rating, please consult)
Noise Level	Max. 60 db

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EverExceed | Empower, Energize, Exceed the Energy you Expect forever.



Headquarter:
Shenzhen EverExceed Industrial Co., Ltd

📍 Section A, Floor 19, Senhainuo Kechuang Building,
DeZheng Road No.5, Shilong Community, Shiyan,
Bao'an District, Shenzhen, China.

🌐 www.everexceed.com/www.everexceedcorp.com

📧 marketing@everexceed.com

Branch Company:

EverExceed International Company Limited (HK)

📍 19H Maxgrand Plaza No3 Tai Yau St San PO Kong KLN Hongkong
📧 info@everexceed.com

EverExceed International (UK) Limited

📍 63-66 HATTON GARDEN FIFTH FLOOR, SUITE23 LONDON
UNITED KINGDOM

📧 Europe@everexceed.com

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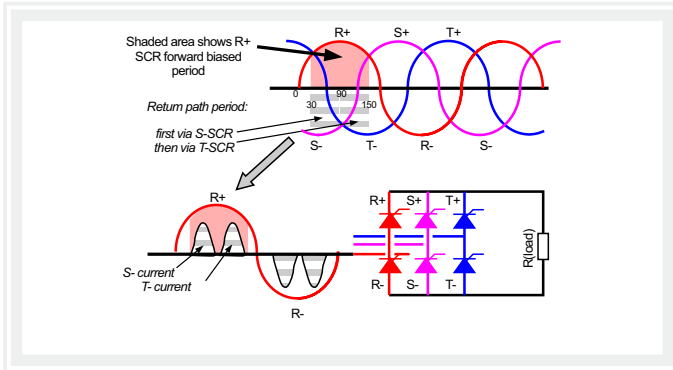
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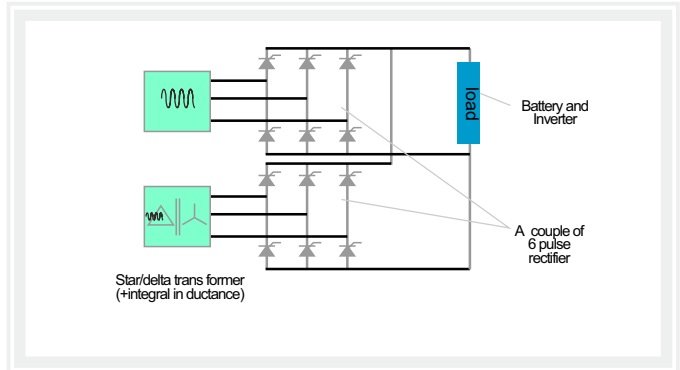


Functional principle & advantages

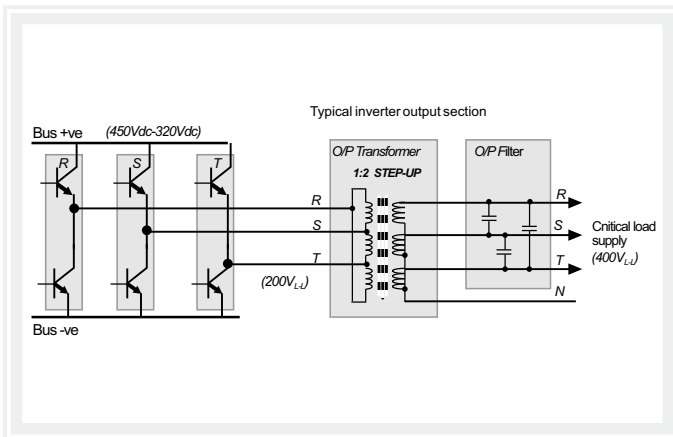
Functional operation Principle - Rectifier design-6 pulse SCR rectifier



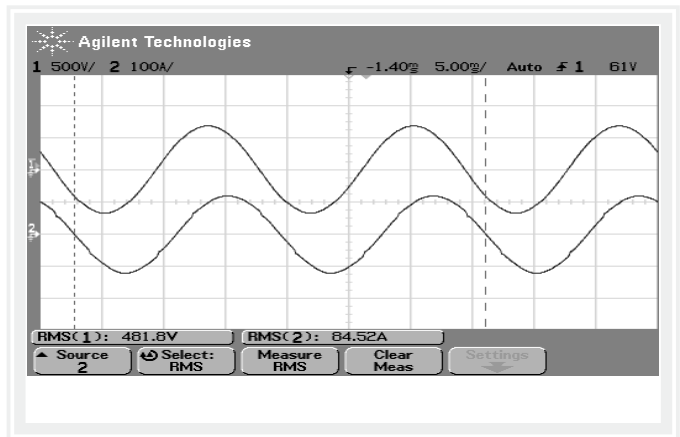
Functional operation Principle - Rectifier design-12 pulse SCR rectifier



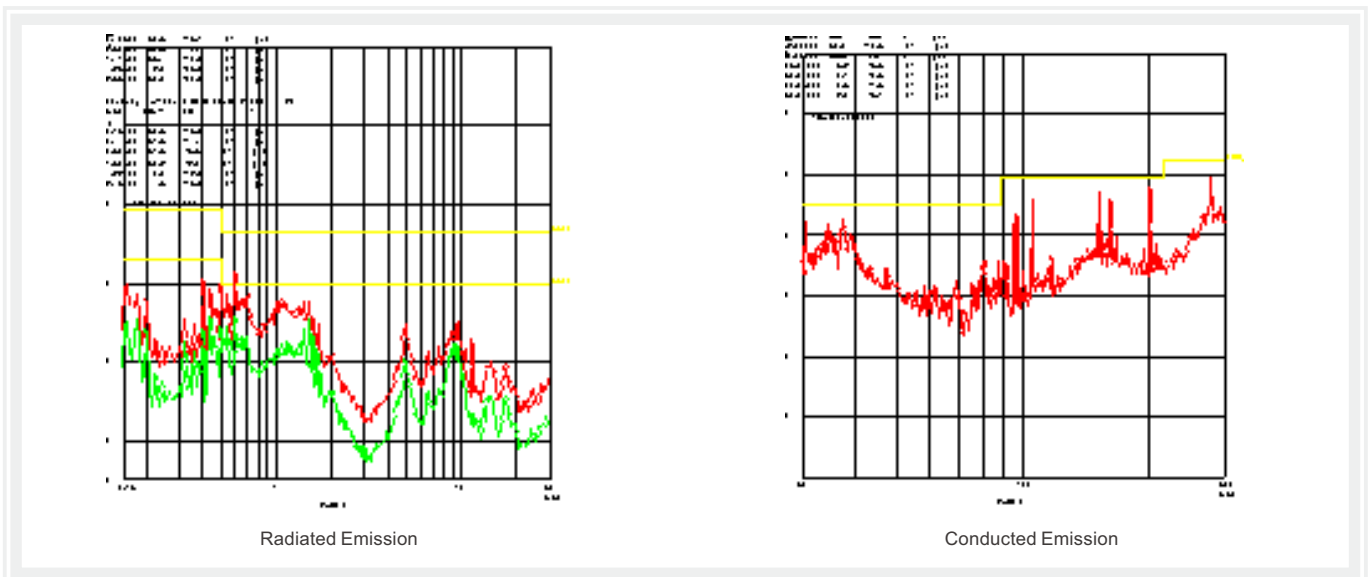
Functional operation Principle - Inverter design



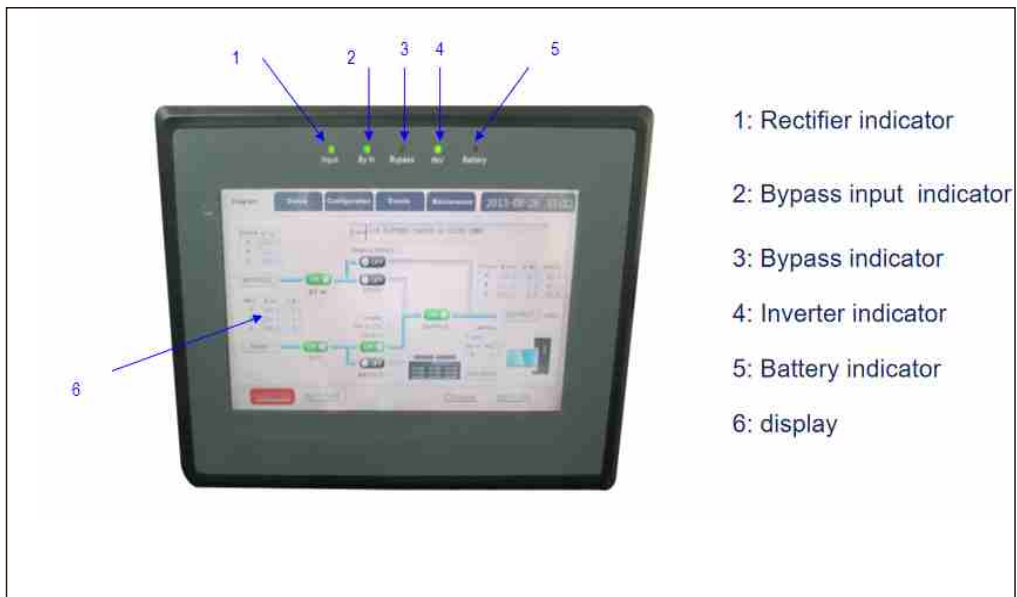
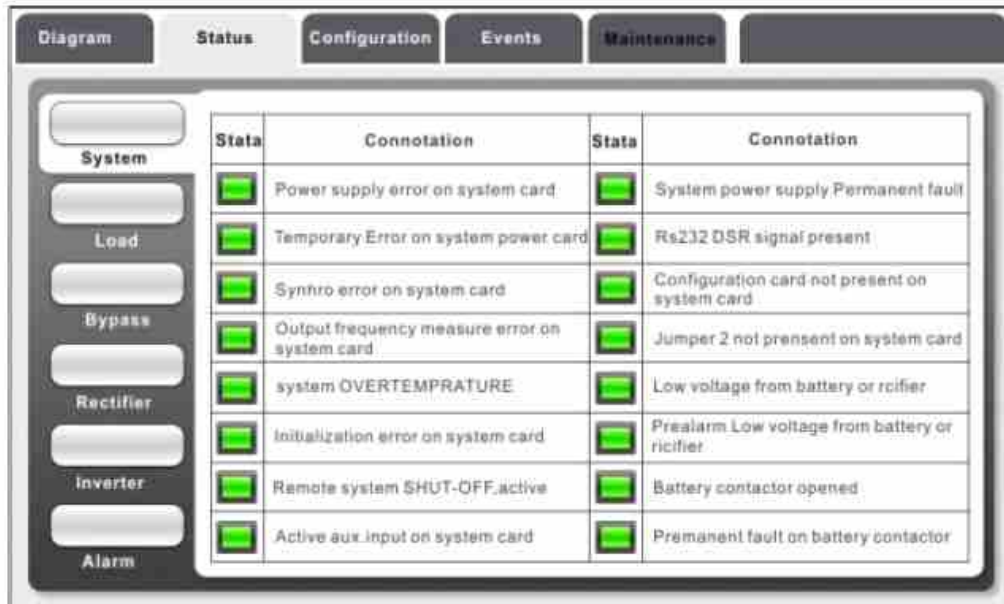
Advantage - Pure sine wave output voltage



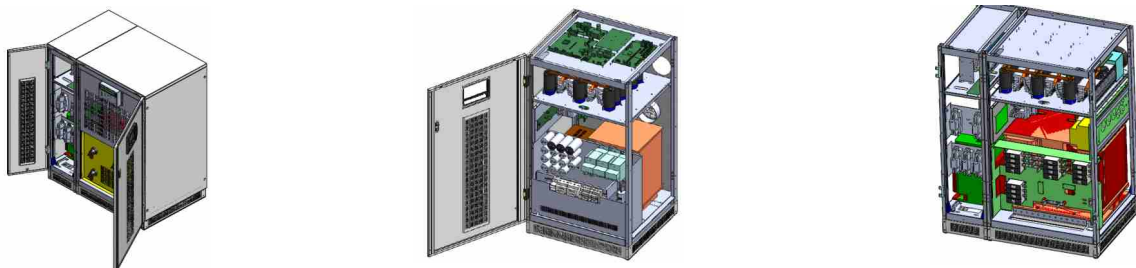
Advantage - High EMC Performance



Touch screen



Appearance design



Power Champion Series

GENERAL	
Model	PW15
Capacity	15kVA
Topology	Double conversion online system with output isolation transformer
Control	Microprocessor controlled system
RECTIFIER	
Isolation Transformer (OPTIONAL)	Galvanically isolated
Nominal Input Voltage	380 VAC / 400 VAC / 415VAC ±15% (3 phase+N)
Nominal Input Frequency	50Hz / 60Hz ±5%
Input PF	≥ 0.9Inductive (12 Pulse)
Total Harmonic Distortion (THDi)	≤ 10% (12 Pulse)
BATTERY	
Nominal DC Voltage	192VDC
Battery Charging Principle	Constant Current / Constant Voltage
Boost Charge Voltage (V/Cell)	2.4 Lead Acid Battery; 1.60 NiCd Battery (Based on battery brand and type)
Float Charge Voltage (V/Cell)	2.23 Lead Acid Battery; 1.40 NiCd Battery Based (Based on battery brand and type)
INVERTER	
Topology	3 Full bridge 6 high frequency IGBT inverter modules (3 Phase); 1 Full bridge 2 high frequency IGBT inverter modules (1 Phase)
Isolation Transformer	Galvanically isolated (standard)
Power Factor	0.8
Nominal Output Voltage	220 VAC / 230 VAC / 240 VAC ±15% (1 phase)
Voltage Tolerance Static	± 1%
Dynamic with 100% Load Change	± 10% in 50 msec.
Overload	100%-110%, 5 hours 110%-125%, 10 min 125%-150%, 1 sec
Waveform	Pure sinusoidal
Total Harmonic Distortion (THDv)	< 3%, at linear load <5%, at non-linear load
Crest Factor	3 : 1 (1 second)
Nominal Output Frequency	50 Hz / 60 Hz ±0.1%
Switching Frequency	16 kHz/ 8kHz /4kHz(Different power, Different frequency)
STATIC BY-PASS	
Topology	Uninterruptible static switch with back-feed protection
Bypass System	No break semiconductor thyristor – thyristor
Isolation Transformer (Optional)	Galvanically isolated 50/60 Hz ± 2%
Inverter / Bypass Transfer Time	Inverter failure: Max. 5 msec. Overload or manual transfer: 0 msec. Bypass/Inverter transfer time: < 4 msec.
MECHANICAL BY-PASS	
Topology	Make before break mechanical switch with locking system

Power Champion Series

SYSTEM	
Efficiency	AC mode: 90% Battery mode: 92% ECO mode: 99%
MCCB and Fuse	Input MCCB, Output MCCB, Battery fuse, Bypass MCCB, Maintenance bypass MCCB, Battery MCCB (Optional) (Small capacity UPS using MCB)
Measurements	LCD display for line voltage / frequency / current ,battery voltage / current, battery soc , Output voltage / frequency / current
Protections	Input: input high voltage, input low voltage, input frequency failure,phase sequence fault (3 phase), Soft start, over temperature protection battery: I-c filters, charge current limited Output: short circuit protection, over voltage protection, under voltage protection, over current protection, over temperature protection
LCD Alarm	Disturbances on bypass line, by-pass manual, Maintenance bypass MCCB close, cable defect in parallel, Bypass voltage failure, bypass MCCB open, SCR fuse failure, mains voltage failure, Input frequency error, Input MCCB open, battery low voltage, battery discharge, battery MCCB open, Output overload, Internal fault (Including auxiliary power supply, IGBT, SCR and other internal circuits)
Alarm Contacts	Low battery, mains input normal / failure, charger failure, overtemperature, Charger overvoltage, load mcb on/ off, battery mcb on / off, earth fault(optional);
Adjustable Parameters	Battery number, boost charge voltage, float charge voltage, Battery charge current, battery ending voltage, password;ups mode (ups, eco, bypass inhibit), dc cut off, low battery level, Output voltage adjustment, auto start on/off, date, alarm sound on/off, password
Communication	RS 485 / RS 232(standard) / (OPTIONAL) ethernet ports, modbus, profibus, SNMP, TCP/IP
Paralleling (OPTIONAL)	Parallel redundancy
SAFETY & ENVIRONMENT	
Electrical Standards	IEC 62040-3 (Performance), EN 50091-1 (Security) / EN 50091-2 (EMC)
Over Voltage Protection	IEEE 587 4500 A, 110 joules (standard) / 40kA surge arrestor (OPTIONAL)
Electrical Interference Reduction	FCC part 15 class B
Protection Level / Color	Parallel redundancy
Communication	IP54 / RAL 7035
Enclosure Material	The side panel is 2mm, the door panel is 2.5mm, and the base frame is 3mm;
Cooling	Forced fan (standard)
Cable Entry	Bottom (standard) / top (optional)
Heater & Lighting	Optional
Distribution	MCB 10A * 10 channels; (Switch brand: Schneider)
MTBF	200,000 hrs. (without battery group)
Operating Temperature	-10 / +40 °C. (Higher operating temperatures are available, please consult)
Relative Humidity	0 – 95 %(non-condensing)
Operating Altitude	Max. 4000 Mt. (Higher altitudes requires de-rating, please consult)
Noise Level	Max. 60 db



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power your applications



EverExceed | Empower, Energize, Exceed the Energy you Expect forever.



Headquarter:
Shenzhen EverExceed Industrial Co., Ltd

📍 Section A, Floor 19, Senhainuo Kechuang Building,
DeZheng Road No.5, Shilong Community, Shiyan,
Bao'an District, Shenzhen, China.

🌐 www.everexceed.com/www.everexceedcorp.com

📧 marketing@everexceed.com

Branch Company:

EverExceed International Company Limited (HK)

📍 19H Maxgrand Plaza No3 Tai Yau St San PO Kong KLN Hongkong
📧 info@everexceed.com

EverExceed International (UK) Limited

📍 63-66 HATTON GARDEN FIFTH FLOOR, SUITE23 LONDON
UNITED KINGDOM

📧 Europe@everexceed.com