



KEEPING THE **POWER** ON FOR OVER 25 YEARS

Advanced *Power Conversion* Solutions



THE BRITISH POWER CONVERSION COMPANY™

## Who We Are

Founded in 1996, The British Power Conversion Company, based in Romsey, Hampshire, is an independently owned international corporation offering an established and effective range of power protection products and services to a broad spectrum of industries and sectors.

With over 25 years experience, our business has evolved and we no longer just operate under the traditional fields of UPS Systems and Batteries. Our continued growth in manufacturing of Modular UPS, Static Emergency Lighting Systems, Long Runtime Inverters and Static Transfer Switches for critical applications has developed into a major part of our group. We are also actively developing PV (Solar) and associated products for Wind and Turbine Generators to address the major growth in the 'Renewable Energy' market.

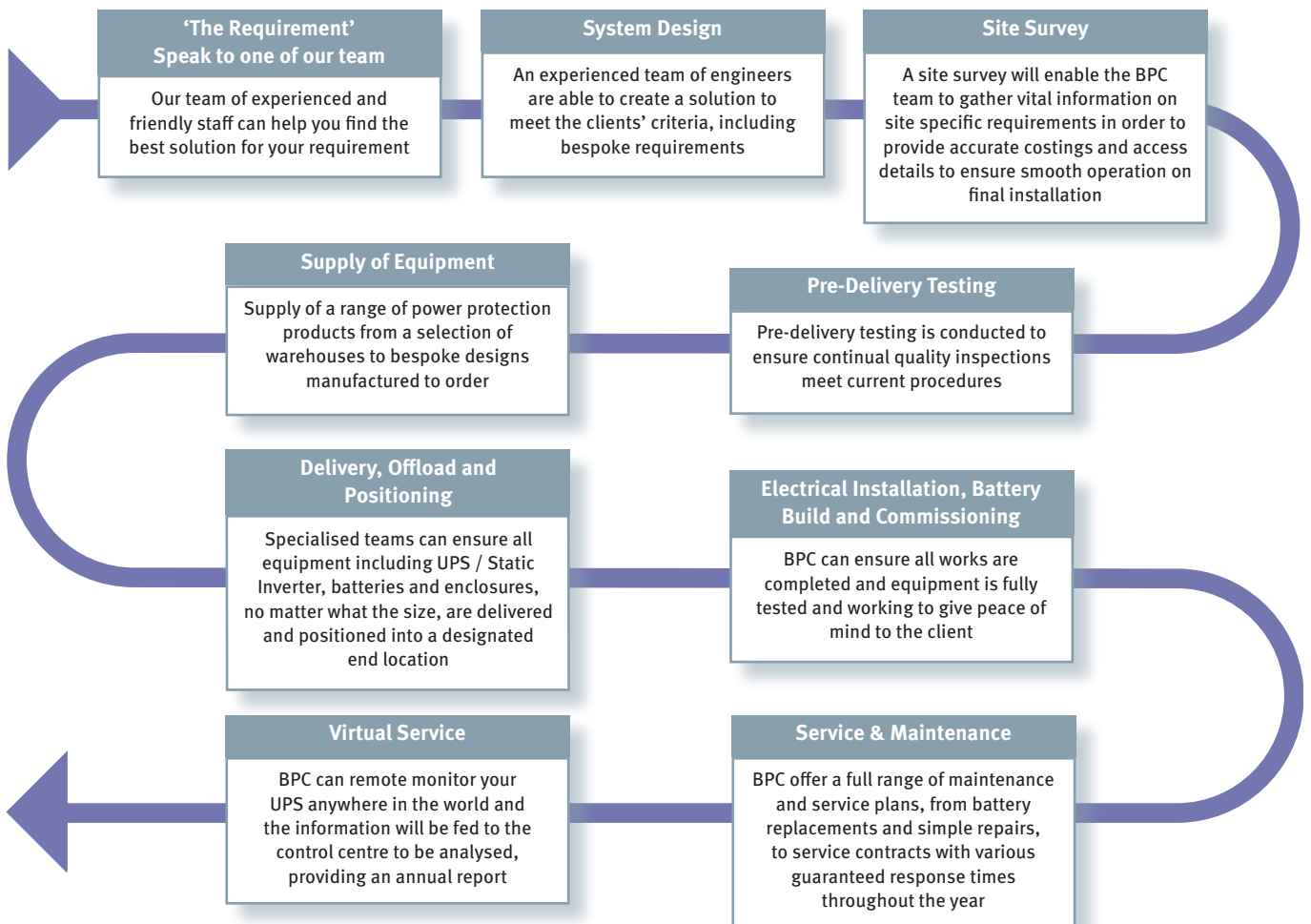
The BPC Group has seen BPC Energy evolve as the predominant company for the manufacturing and distribution of power protection products, alongside a dedicated distributor network in Europe, Middle East and Africa.



ISO 9001:2015 For design, assembly, commissioning, testing and servicing



**MADE IN  
UNITED KINGDOM**





# Advanced Power Conversion Solutions

## Our Products

BPC Energy manufacture and distribute a wide range of UPS and related power protection products aimed at the Computer, Telecom, Midrange Computer, Data Centre, Emergency Lighting, Industrial and Three Phase sectors of the market.

BPC Energy is at the forefront of modern power protection with expertise in the design, development and manufacture of special and custom systems enabling us to meet the diverse needs of the computing, leisure, industrial, commercial, emergency services, medical, lighting, military & government markets. As well as an extensive range of UPS and Batteries, we also offer a variety of products such as Frequency and Voltage Converters, Static Inverters, Solar Inverters, Rectifiers and Generators. If required, BPC can also provide bespoke solutions based on tender specifications to meet specific customer requirements.



## Our Service

BPC's devotion to excellence is reflected in the enduring quality of its products and is matched by an equally lasting commitment to customer care. Not only do we pride ourselves on competitive prices and quality products, we also have a comprehensive Service Department offering a full range of services, from Site and Power Surveys, Commissioning and Battery-Builds to Service Contracts, Maintenance Visits and Remote Monitoring Solutions.

We provide a dedicated customer service to the UK and International markets and, combined with our extensive range of UPS and power protection products, we have a solution for every application.



## Our Training

BPC Energy offer fully specialised and flexible training courses led by highly experienced and knowledgeable engineers for any requirement, from new product training to bespoke general UPS topology subjects. Quality CPD approved training courses can be held at BPC comprehensive headquarters in the UK offering a mixture of both classroom and workshop facilities to allow for all aspects of theory and practical training.

As an established international company with offices globally, BPC have the flexibility to also carry out training at customer sites upon request wherever the location may be.

Courses can last anywhere between half a day or up to 10+ days depending on course content and duration request.



## Industries & Applications

### Governmental



Working with government authorities as an approved and trusted supplier, experienced in tender submittal processes.

- » **Ministry of Finance, Jordan**
- » **Egyptian Customs Authority, Egypt**
- » **Oxford University, UK**
- » **NITA Uganda**

### Telecommunication



It is important for any business to ensure telephone systems are provided with uninterrupted power to ensure business continuity, often with long runtime requirements.

- » **Batelco, Bahrain**
- » **Omantel, Sultanate of Oman**
- » **Motorola, Kuwait**
- » **Vodafone UK**

### Military



Military applications often require specific design specifications such as specialised enclosures, high IP ratings and voltage and frequency conversions.

- » **Signals Regiment, UK**
- » **G.H.Q. Army Forces, Jordan**
- » **HMNB Devonport Dockyard, UK**
- » **US Army, Kuwait**

### Medical



Providing essential power protection for critical equipment within a medical environment such as MRI scanners and life support machines.

- » **Toshiba, UAE**
- » **Farwanya Hospital, Kuwait**
- » **Mid-Essex Broomfield Hospital, UK**
- » **Edinburgh Hospital, UK**

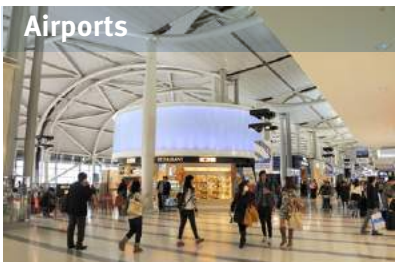
### Sporting Grounds



It is essential to ensure continual power during high profile sporting events supporting emergency lighting, ticketing booths, computer networks and CCTV.

- » **Tottenham Hotspur Football Club, UK**
- » **Olympic Stadium, UK**
- » **Sandown Park Racecourse, UK**
- » **Al Naser Stadium, UAE**

### Airports



Airports are busy environments with many types of critical equipment requiring power protection essential in the day to day running including Radar, control towers, IT/networks, security and lighting.

- » **Liverpool Airport, UK**
- » **Cairo International Airport, Egypt**
- » **Abu Dhabi Airport, UAE**
- » **Dublin Airport, Ireland**



# Advanced Power Conversion Solutions

## Industrial



Industrial applications often need bespoke designs to meet unique and rigorous requirements. BPC specialise in adapted technology to suit every customer.

- » **Airedale Air Conditioning, UK**
- » **Suez Canal Authority, Egypt**
- » **Planet Press, Nigeria**
- » **Aluminium Smelter, Bahrain**

## Emergency Lighting



Emergency lighting in public areas is now standard practice and must meet EN50171 specification to ensure 1hr or 3hr back up times.

- » **Park Plaza Hotel Westminster, UK**
- » **Café Royal, UK**
- » **National Trust, UK**
- » **O2 Arena, Ireland**

## IT Solutions



IT systems are an integral part of any business. Interrupted or loss of power can cause devastating effects. It is essential to ensure continual power.

- » **Wiltshire Police HQ, UK**
- » **Public Security, Jordan**
- » **Al Ain University, UAE**
- » **Axa Insurance HQ, UK**

## Banking



The Banking sector relies heavily on IT solutions. Loss of power can be detrimental with unscheduled downtime and may result in a large financial loss.

- » **Fidelity Bank, Nigeria**
- » **Misr Bank, Egypt**
- » **RAK Bank, UAE**
- » **Gulf Bank, Kuwait**

## Others

- » Server Farms
- » CCTV / Security
- » Data Centres
- » Hotels / Tourism
- » Process Control
- » Telephone Systems
- » Retail
- » Petrochemical
- » Networking
- » Marine
- » Manufacturing
- » Transport
- » POS Systems
- » Entertainment
- » Solar / Windfarms
- » Broadcasting
- » Automation
- » Anaerobic Digestion Plants



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Networking

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BPC Group

## BPC Product Guide

Choosing the right Power Protection product is key. BPC provides an extensive range of products to suit any requirement or application, priding ourselves on not only providing a hardware solution, but a tailored package to supply the correct size of equipment, runtime required and services to suit client needs.

	UPS	Static Inverter	Product for Medical Applications	Other	Topologies	500VA	600VA	650VA	700VA	750VA	800VA	850VA	1000VA	1200VA	1500VA	2000VA	3000VA	4000VA	5000VA	6000VA	8000VA	10kVA	12kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA
PowerStar i	●				VI	●					●		●		●	●													
PowerPrem+	●				VI					●			●		●	●	●		●										
PowerGem Plus Tower	●				VFI								●		●	●													
PowerGem Plus RT	●				VFI								●		●	●			●		●								
PowerGem Plus RT LFP	●				VFI								●		●	●													
PowerPrime	●		●		VFI																●			●	●				
PowerPro EF300 Compact	●		●		VFI																●		●	●	●				
PowerPro EF300R	●		●		VFI																●		●	●	●	●	●	●	●
PowerPro EF300XU	●		●		VFI																								
PowerPro EF300TR	●		●		VFI																	●		●	●	●	●	●	●
PowerTower Green RITo6	●				VFI															●			●		●	●			
PowerTower Green CMS	●				VFI																			●	●	●	●	●	●
PowerPro ELXA		●	●			●								●		●													
PowerPro ELMOD		●	●															●		●		●	●	●					
PowerPro EL300DSP		●	●																		●			●	●	●	●	●	●
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Medical Isolated Power Supply (MIPS)			●																		●								
Automatic Voltage Regulators				●															●		●	●		●	●	●	●	●	●
Transfer Switches			●	●																									
PowerSolar Inverter				●													●		●										



## KEEP THE POWER ON™

100kVA	120kVA	160kVA	180kVA	200kVA	250kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1200kVA	0.7 Output Power Factor	0.8 Output Power Factor	0.9 Output Power Factor	Unity (optional)	Tower	Rack	Wall Mounted	Modular	1/1	3/1	3/3	Simulated Sinewave	Pure Sinewave	Online Double Conversion	Transformer Based	Transformerless	Parallelable	USB	RJ-45	RS232	Dry Port Contacts	SNMP Compatible	Emergency Power Off	Remote Monitoring Options	Page number		
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NOTE: Capacity max. is stated as standalone systems. Options for paralleling are available on certain models.

## Keeping The Power On

Power related problems can occur in two forms: disturbances that occur with a mains supply (this raises concerns within power quality issues), or when the mains supply completely fails (this raises concerns with how to keep systems running and business continuity).

### SAGS

Short duration decreases in the mains supply voltage which generally last for several cycles and are one of the more common forms of disturbances.

When sags occur, sensitive equipment can lock or hang causing data loss and system resets.



### TRANSIENTS & SPIKES

Very fast high energy surges lasting only a few milliseconds. When transients or spikes occur equipment can lock or hang, crash and even suffer damage which inevitably causes data loss and corruption. Large transients can occur from local or worst case a direct lightning strike.



### BROWNOUTS

Long term sags in the mains supply voltage which can last up to several days.

During a brownout, equipment can reset or even shutdown.



### FREQUENCY VARIATION

Caused by the main power source, frequency variations may cause a motor to run faster or slower to match the frequency of the input power. This would force the motor to run inefficiently and/or lead to added heat and degradation of the motor through increased motor speed and/or additional current draw.



## UPS Topologies

UPS systems are classified into three different types:

VFD – Voltage & Frequency Dependant

VI – Voltage Independent

VFI – Voltage & Frequency Independent

**OFFLINE – (VFD)**

**LINE INTERACTIVE (VI)**

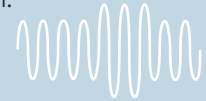
**ONLINE – (Double Conversion) (VFI)**

Power supply problems are caused by various sources, for example distribution network faults, system switching, weather and environmental conditions, heavy plant equipment or simply just faulty hardware. Regardless of the cause of the problem, the result will include one or more of the following types of power problems:

### SURGES

Short duration increases in the mains supply voltage which generally last several cycles. When surges occur equipment can suffer from premature failure. The high voltage causes wear and tear and general component degradation.

This may not be noticeable until failure, although heat out is a good sign.



### ELECTRICAL NOISE

A high frequency noise that can cause severe disruption and damage to electrical circuits and equipment. This can cause data loss and data processing errors.



### BLACKOUTS & MAINS FAILURES

When the mains supply fails completely this is known as a total mains failure or blackout.

A break in the mains supply of only several milliseconds is sufficient enough to crash, lock or reset many of the components that make up a typical data or voice processing IP network, such as a PC, terminal, console, server, PBX, printer, modem, hub or router.



### HARMONICS

Mostly caused by non-linear load which pulls the current from the mains supply in large peaks. Loads containing rectifiers, switched mode power supplies, or rotating machines can be attributed to this type of fault.



	VFD	VI	VFI
Blackout	●	●	●
Sags/Brownout	●	●	●
Dynamic Overvoltage	●	●	●
Undervoltage		●	●
Overvoltage		●	●
Transient/Spikes			●
Frequency Variation			●
Voltage Harmonics			●
Surges			●

# PowerStar™ *i* Series

## Simulated Sinewave UPS

### 600VA-2000VA

» Intelligent » Reliable » Plug & Play



**BPC have a range of intelligent Line Interactive UPS products, designed to offer total power protection to a broad range of applications.**

The PowerStar *i* Series range will provide clean and reliable backup power to ensure continued data integrity and optimum performance under a wide range of mains power conditions to offer total power protection to a broad range of modest applications.

This high level of power protection can be incorporated with our advanced power management and diagnostics software package that will allow your IT Manager or Systems Integrator to remotely monitor and manage both the UPS and IT application.

- » Fully intelligent line interactive
- » Microprocessor based design
- » LCD touch screen user interface
- » Boost and buck AVR for voltage stabilisation
- » Cold start function
- » Built in USB communication port
- » Overload protection
- » Intelligent power management
- » Compact size



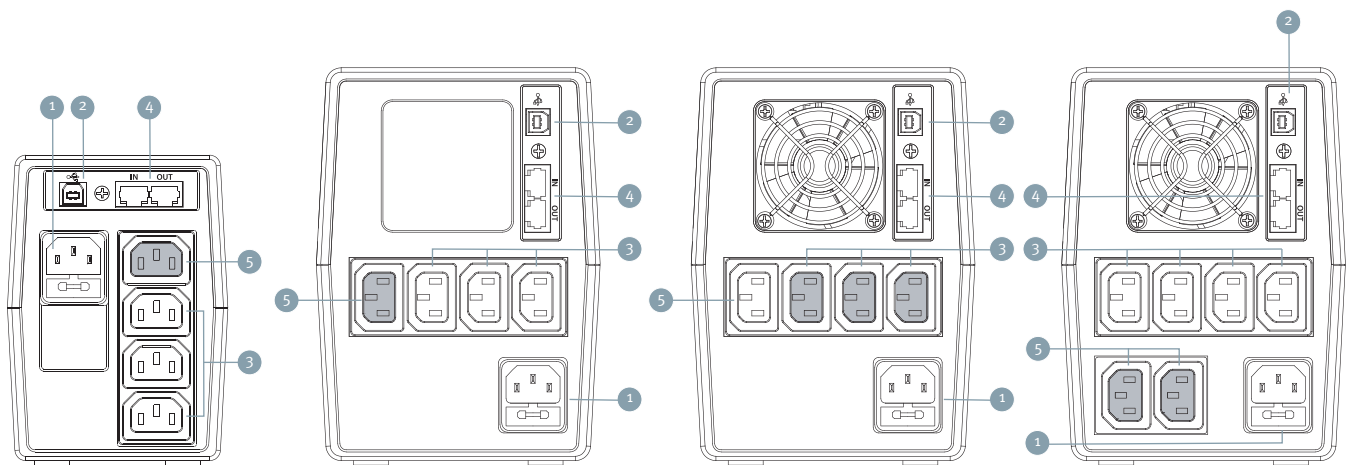
# PowerStar™ i Series

## Technical Specification



MODEL	PSTARi600	PSTARi800	PSTARi1000	PSTARi1500	PSTARi2000
Power Rating VA / Watts	600 / 360	800 / 480	1000 / 600	1500 / 900	2000 / 1200
<b>INPUT</b>					
Nominal Voltage	220 Vac / 230 Vac / 240 Vac				
Voltage Range	162 - 290 Vac				
Frequency	50 or 60 Hz (auto-sensing)				
<b>OUTPUT</b>					
Nominal Voltage	220 Vac / 230 Vac / 240 Vac				
Frequency	±1 Hz				
Transfer Time	Typical 2-6ms				
Overload Capacity (Online)	110% ±10% (Fault alarm after 5 minutes), 120% ±10% (shutdown immediately)				
<b>BATTERY</b>					
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries				
Charging Current (max.)	Approximately 1A				
Charging Voltage	13.7 ±0.5V (normal mode)				
<b>GENERAL</b>					
Temperature/Humidity	0 - 40°C / 0 - 90% (non-condensing)				
Acoustic Noise level	Less than 40dB				
Management Software	Included				
Dimensions (mm) WxDxH	101 X 300 X 142			130 X 300 X 182	
Net Weight (kgs)	4.4	5	8.2	10.4	11

- 1 AC Input
- 2 USB Communication
- 3 Output Battery Backup Connection
- 4 RJ-45 Connection
- 5 Output Surge Only Connection



600-800VA Models

1000VA Models

1500VA Models

2000VA Models

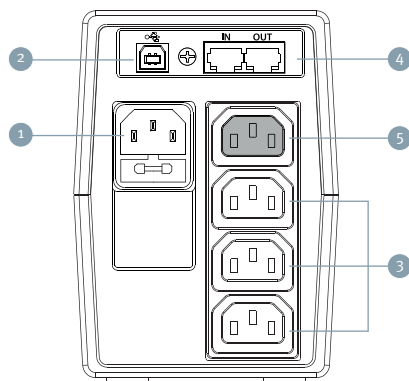
## PowerStar™ i Series Lithium LiFePo4

### Technical Specification



MODEL		PSTARi800LFP	PSTARi1600LFP
Power Rating VA / Watts		800 / 400	1600 / 800
<b>INPUT</b>			
Nominal Voltage		230 Vac	
Voltage Range		172 - 280 Vac	
Frequency		50 Hz ± 5 Hz	
<b>OUTPUT</b>			
Nominal Voltage		230 Vac	
AC Voltage Regulation (Batt. Mode)		±10%	
Frequency Range (Batt. Mode)		50 Hz ± 1 Hz	
Transfer Time		Typical 2 – 6ms, 10ms max	
Waveform (Batt. Mode)		Simulated Sinewave	
<b>BATTERY</b>			
Battery Type		12.8V / 8 Ah x 2pcs Lithium Battery (2S1P)	12.8V / 8 Ah x 4pcs Lithium Battery (2S2P)
Battery Lifecycle		1C ≥80% initial capacity @ 2000 cycles with 0.5C charge / discharge condition at 25°C	
Charge Voltage		28.4 VDC ± 1.0 VDC	
Charging Current		4A	
Typical Recharge Time		≤2 hours recover to 90% capacity	≤4 hours recover to 90% capacity
Backup Time	One notebook (37W)	3.2 hours	6.4 hours
	Two notebooks (74W)	1.8 hours	3.6 hours
	Router (6W)	6 hours	12 hours
<b>GENERAL</b>			
Temperature/Humidity		0-90% RH @ 0-40°C (non-condensing)	
Acoustic Noise level		Less than 50dB (battery fully charged, without buzzer)	
Management Software		Included	
Dimensions (mm) WxDxH		130 x 320 x 182	145 x 395 x 220
Net Weight (kgs)		8	13.4

- ① AC Input
- ② USB Communication
- ③ Output Battery Backup Connection
- ④ RJ-45 Connection
- ⑤ Output Surge Only Connection



800VA Models



1600VA Models

# PowerPrem™ + Series

## Line interactive UPS

### 800VA - 5kVA

» Intelligent » Reliable » Plug & Play

VI



**BPC have a range of intelligent Line Interactive UPS products, designed to offer total power protection to a broad range of applications.**

The PowerPrem+ range will provide clean and reliable backup power to ensure continued data integrity and optimum performance over challenging mains power conditions to offer total power protection to a variety of modest applications.

This high level of power protection can be incorporated with our advanced power management and diagnostics software package that will allow your IT Manager or Systems Integrator to remotely monitor and manage both the UPS and IT application.

- » Small office / Home office
- » Telecommunications
- » PC, IT Applications
- » Networking



## PowerPrem™+

### Pure Sinewave UPS – 800VA - 5kVA



- Microprocessor-based line interactive design
- Pure sinewave output
- Built-in boost and buck AVR
- User-friendly LCD design
- Tower or Rackmount convertible design
- 0.9 output power factor (800VA-3kVA), (0.7 at 5kVA)
- Programmable Power Management Outlets (800VA-3kVA)
- Hot swappable battery design (800VA-3kVA)
- ECO Mode for energy saving
- Emergency power off function (EPO)
- Long runtime models rated at 0.8pf (1kVA-3kVA)
- Multiple communication options available

The PowerPrem+ range of Line Interactive Pure Sinewave UPS is a cost effective solution ideal for Network Server protection and inductive load applications such as lifts, roller shutter doors or motor loads.

The PowerPrem+ has built-in boost and buck AVR. With built-in voltage regulation, the UPS will maintain regulated nominal output without using battery power during brownouts and overvoltages. Each model has multiple communication options including an RS232 / USB and SNMP slot. 1kVA-3kVA long runtime models extended backup times with larger internal charger options and matching battery cabinets, providing an enhanced and flexible product range to offer complete protection.

#### RACK/TOWER DESIGN

The PowerPrem+ is designed to have the flexibility of use as a floor standing tower type UPS or to be integrated into a 19" rack cabinet. Each system is supplied with a mounting kit, allowing the user to choose either option of operation.

#### ADJUSTABLE LCD DISPLAY

The enhanced LCD display can be manually positioned and programmed for use as a rackmount or tower unit to suit the mode of operation, providing an intelligent and easily functional, fully comprehensive display showing all key parameters, alarms and indicators.

#### HOT SWAPPABLE BATTERIES

Having a hot swappable design for the PowerPrem+ 800VA-3kVA ensures clean and uninterruptible power to protected equipment during a battery replacement.



#### ECO MODE OPERATION FOR ENERGY SAVING

The ECO Mode function is available on 800VA-3kVA models allowing for a cost-effective operation of the system as high as 98%. In ECO Mode, the load is supplied by the mains and when the battery is fully charged, the fan will stop running for energy saving. In the event of a mains failure, the inverter takes over the load and provides supply continuity to the connected systems.



# PowerPrem+ Line Interactive UPS

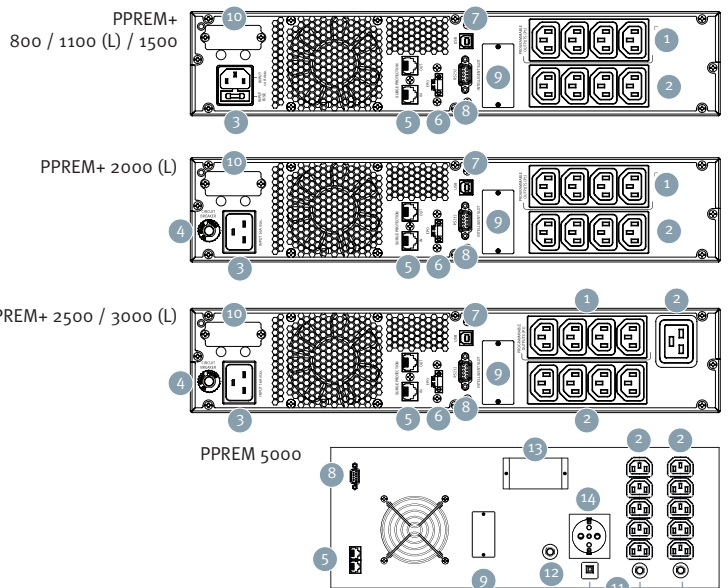
## Technical Specification



MODEL	PPREM+ 800	PPREM+ 1100 (L)	PPREM+ 1500	PPREM+ 2000 (L)	PPREM+ 2500	PPREM+ 3000 (L)	PPREM 5000	
Power Rating VA / Watts	800 / 720	1100 / 990	1500 / 1350	2000 / 1800	2500 / 2250	3000 / 2700	5000 / 3500	
<b>INPUT</b>								
Nominal Voltage	208 / 220 / 230 / 240 Vac (standard)						200/220/230/240 Vac	
Voltage Range	162 - 290 Vac (standard)						-20%~+24% standard -29%~+33% adjustable	
Frequency	50 Hz / 60 Hz (auto sensing)							
<b>OUTPUT</b>								
Nominal Voltage	208 / 220 / 230 / 240 Vac (standard)						200/220/230/240 Vac	
Frequency	50 Hz / 60 Hz $\pm 1\%$ (batt. mode)						50 Hz / 60 Hz	
Transfer Time	Typical 2 - 6ms, max. 10ms						Typical 4ms	
Overload Capability	103% - 120% shutdown after 5 minutes and go to fault, 120% - 150% shutdown after 10 seconds and go to fault, >150% shutdown after 1 second and go to fault						Overload alarm 100% - 120% Overload shutdown 120% - 190%	
Crest Factor	3:1							
<b>BATTERY</b>								
Standard Model	Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries						
	Charging Current (max.)	1.5A					6A	
	Charging Voltage	27.4 Vdc $\pm 1\%$		54.8 Vdc $\pm 1\%$		82.1 Vdc $\pm 1\%$		
Long Runtime Model	Charging Current (max.)	N/A	1A / 2A / 4A / 8A		N/A	1A / 2A / 4A / 8A		
	Charging Voltage	N/A	27.4 Vdc $\pm 1\%$		N/A	82.1 Vdc $\pm 1\%$		
<b>GENERAL</b>								
Operating Humidity	0 - 90% RH at 0 - 40°C (non-condensing)						5-90% RH at 0-40°C (non condensing)	
Acoustic Noise Level	<45 dB @ 1 metre						<40 dB @ 1 metre	
Management Software	Included							
Standard Model	Dimensions (mm) WxDxH	438 x 410 x 88		438 x 510 x 88		438 x 630 x 88		435 x 500 x 180
	Net Weight (kg)	12.9	13.4	19.5	21.5	30.63	32.24	80 (incl. battery)
Long Runtime Model	Dimensions (mm) WxDxH	N/A	438 x 410 x 88		N/A	438 x 410 x 88		N/A
	Net Weight (kg)	N/A	9	N/A	11	N/A	11.9	N/A

Schuko, NEMA & India Type sockets are available on request

- 1 Programmable outlets, connect to non-critical loads
- 2 Output receptacles, connect to mission-critical loads
- 3 AC input
- 4 Input circuit breaker
- 5 Network/Fax/Modem surge protection
- 6 Emergency power off function connector (EPO)
- 7 USB communication port
- 8 RS-232 communication port
- 9 SNMP intelligent slot
- 10 External battery connector (L models only)
- 11 Re-settable fuses for output
- 12 Re-settable fuse for input
- 13 Inlet (Screw type)
- 14 Schuko Socket



# PowerGem™ Plus Tower Series

Single Phase Input and Output – True Online Double Conversion UPS  
1kVA – 10kVA

» Networking

» User-friendly

» Cost-effective

VFI



The BPC PowerGem Plus Tower is a traditional range of high density UPS Systems that can be installed in tower cabinet configurations powering a wide range of applications.

The PowerGem Plus Tower is an efficient system resulting in improved operational performance up to 92% providing a much greener product with smaller battery and longer autonomy backup times.

The range is equipped with the latest digital signal processor (DSP) technology with versatile features demanded by IT managers enabling integration into all types of networking environments.

» SoHo

» Networking

» Healthcare

» Industrial

» Telecommunications



## PowerGem™ Plus Tower Features

### ADVANCED FUNCTIONAL LCD DISPLAY

The PowerGem Plus Tower DSP controlled UPS provides an intelligent high density system suitable for powering a wide range of devices both simply and accurately.

A precise backlit comprehensive LCD display with schematic operation status of the UPS, LED indicators and function keys allowing all the key parameters, alarms and indications to be shown.



### ENVIRONMENTALLY FRIENDLY ENERGY SAVING

The intelligent microprocessor based control system allows for the very low power consumption offered by the interactive ECO mode which provides efficiencies as high as 97%. PowerGem Plus Tower switches instantaneously to online double conversion operation automatically when the mains becomes unstable and fluctuates outside the normal frequency and voltage parameters.

### LOW NOISE LEVEL

More often the PowerGem Plus Tower range will be installed in an office workspace and the environment will be an important factor in the design. Therefore, by using modern high frequency technology the noise dissipation is reduced to less than 50dBA for smaller units.

### WIDE INPUT VOLTAGE

Part of the unique design of the PowerGem Plus Tower is to improve the performance in extreme site conditions with a wide input voltage window, ranging from 110 volts to 300 volts, without the need for the system to transfer into Battery Mode.

### COMMUNICATION INTERFACE

This feature will allow either the USB or RS232 communication port to work with an SNMP simultaneously. The internal slot is provided for remote control and monitoring agents like SNMP or relay cards.

- True online double conversion
- Digital Signal Processor (DSP) technology
- Wide input voltage (110V - 300V)
- 0.9 output power factor
- Intelligent self-diagnosis
- Pure sinewave output
- Multiple communication ports
- Emergency Power Off (EPO) function
- Long runtime versions
- Automatic battery test function
- ECO mode operation for energy saving

### LONG RUNTIME APPLICATIONS

For mission critical applications requiring longer runtimes additional matching battery cabinets can be added. These have been designed both technically and aesthetically to complement the UPS, forming a combined unit which can be easily located without the need for special site considerations.

For business continuity requiring very long runtimes the PowerGem range offers larger built in chargers which can be adjusted from the LCD control panel to provide faster recharge capability.

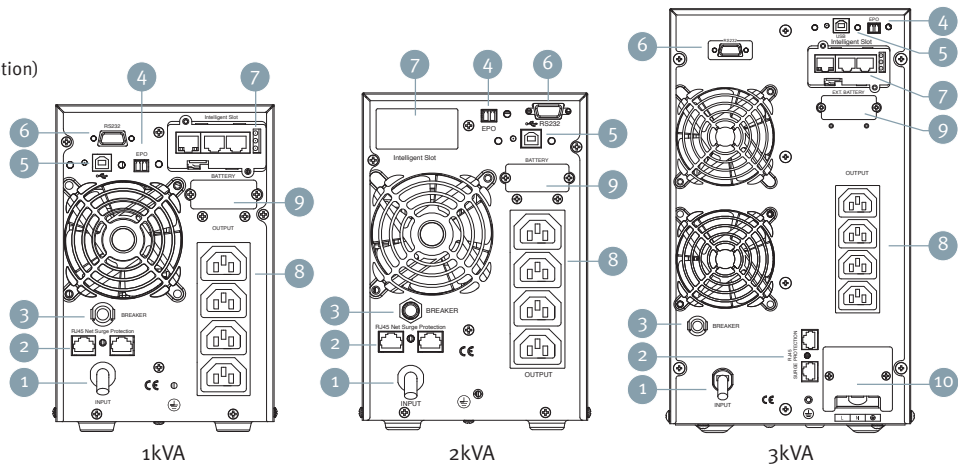


10kVA UPS with matching battery cabinet

## PowerGem™ Plus Tower 1kVA - 3kVA Technical Specification

MODEL	PGPT 1000 (L)	PGPT 2000 (L)	PGPT 3000 (L)
Power Rating VA / Watts	1000 / 900	2000 / 1800	3000 / 2700
<b>INPUT</b>			
Nominal Voltage	220 / 230 / 240 Vac		
Voltage Range	110 - 300 Vac		
Frequency Range	40 - 70 Hz		
Power Factor	>0.99 at 100% load		
<b>OUTPUT</b>			
Nominal Voltage	220 / 230 / 240 Vac		
AC Voltage Regulation (Battery Mode)	± 1%		
Frequency Range (Synchronised Range)	47 - 53 Hz or 57 - 63 Hz		
Frequency Range (Battery Mode)	50 Hz or 60 Hz ±1%		
Crest Factor	3:1		
Harmonic Distortion (Linear Mode)	≤3% THD		
Transfer Time	Zero		
Waveform	Pure sinewave		
<b>EFFICIENCY</b>			
AC Mode	>88%	>92%	>92%
<b>BATTERY</b>			
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries		
Battery Nominal Voltage	24Vdc	48Vdc	72Vdc
Typical Recharge Time	4 hours to 90%		
Charging Current (max)	1A (Max. 12A L version)		
<b>GENERAL</b>			
Operating Humidity	20 - 90% RH @ 40°C (non condensing)		
Operating Temperature	0 - 40°C		
Acoustic Noise Level	<50 dB @ 1 metre		<55dB @ 1 metre
Management Software	Included		
Standard Dimensions (mm) WxDxH	144 x 399 x 209	144 x 399 x 209	191 x 460 x 337
Net Weight (kg)	14.4	17	27.6
Long Runtime Dimensions (mm) WxDxH	144 x 293 x 209	144 x 399 x 209	144 x 399 x 209
Net Weight (kg)	4.0	6.7	7.3

- 1 AC input
- 2 Network/Fax/Modem Surge Protection (option)
- 3 Input circuit breaker
- 4 EPO (option)
- 5 USB communication port (option)
- 6 RS 232 communication port
- 7 SNMP intelligent slot (option)
- 8 Output receptacles
- 9 Battery Terminal
- 10 Output Terminal

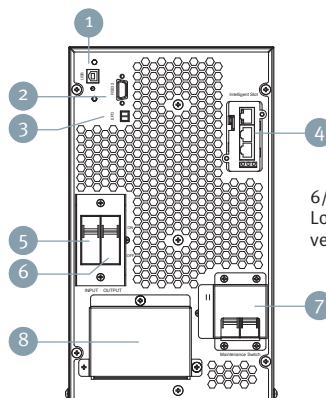


# PowerGem™ Plus Tower 6kVA - 10kVA

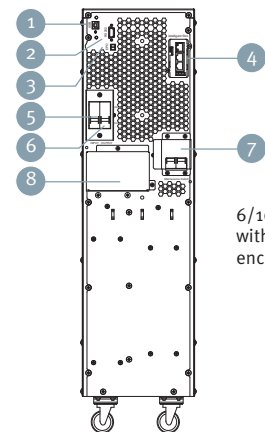
## Technical Specification

MODEL	PGPT 6000 (L)	PGPT 10K (L)
Power Rating VA / Watts	6000 / 5400	10000 / 9000
<b>INPUT</b>		
Nominal Voltage	220 / 230 / 240 Vac	
Voltage Range	120 - 276 Vac	
Frequency Range	45 - 65 Hz	
Power Factor	>0.99 at 100% load	
<b>OUTPUT</b>		
Nominal Voltage	220 / 230 / 240 Vac	
AC Voltage Regulation (Battery Mode)	± 1%	
Frequency Range (Synchronised Range)	47 - 53 Hz or 57 - 63 Hz	
Frequency Range (Battery Mode)	50 Hz or 60 Hz ±1%	
Crest Factor	3:1	
Harmonic Distortion (Linear Mode)	<2% THD	
Transfer Time	Zero	
Waveform	Pure sinewave	
<b>EFFICIENCY</b>		
AC Mode	>90%	
<b>BATTERY</b>		
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries	
Battery Nominal Voltage	219/ 216/ 240Vdc (16 - 20pcs possible)	
Typical Recharge Time	4 hours to 90%	
Charging Current (max)	1A (Max6A L version)	
<b>GENERAL</b>		
Operating Humidity	0 - 90% RH @ 40°C (non condensing)	
Operating Temperature	0 - 40°C	
Acoustic Noise Level	≤55dB @ 1 metre	
Maintenance Bypass Switch	Included	
Management Software	Included	
Standard Dimensions (mm) WxDxH	191 x 460 x 720	191 x 460 x 720
Net Weight (kg)	59	61
Long Runtime Dimensions (mm) WxDxH	191 x 355 x 330	191 x 415 x 330
Net Weight (kg)	10	12

- 1 USB
- 2 RS232
- 3 EPO
- 4 Intelligent slot
- 5 Input switch
- 6 Output switch
- 7 Maintenance bypass switch (covered)
- 8 Terminals (covered)



6/10kVA  
Long Runtime (L)  
version



6/10kVA  
with battery  
enclosure

## PowerGem™ Plus RT Series

Single Phase Input & Output – True Online Double Conversion UPS  
1kVA – 10kVA

» Sophisticated

» Versatile

» Green Concept Design

VFI



The BPC PowerGem Plus RT is a unique range of high density UPS Systems that can be installed, whether on the floor in tower form or in rackmount cabinet configurations powering a wide range of applications.

The PowerGem is an ultra efficient system resulting in improved operational performance up to 97% in ECO mode, 92% in inverter mode and over 90% in battery mode, providing a much greener product with smaller battery and longer autonomy backup times.

The range is equipped with the latest digital signal processor (DSP) technology with versatile features demanded by IT managers enabling integration into all types of networking environments.

- » Data Centres
- » Financial Services
- » Healthcare
- » Networking
- » Telecommunications
- » Mission Critical



## PowerGem Plus RT Features

### RACK/TOWER CONFIGURATION

The PowerGem Plus RT range is extremely versatile and designed to have the flexibility to use as a floor standing tower type UPS or to be integrated into the client's 19" rack cabinet.

The enhanced programmable LCD display can be manually positioned to suit both modes of operation by simply removing and rotating the display panel.



### ADVANCED FUNCTIONAL LCD DISPLAY

The PowerGem Plus RT DSP controlled UPS provides an intelligent high density system suitable for powering a wide range of devices both simply and accurately.

A precise backlit comprehensive LCD display provides schematic operation status of the UPS, LED indicators and function keys allowing all the key parameters, alarms and indications to be shown.



### ENVIRONMENTALLY FRIENDLY ENERGY SAVING

The intelligent microprocessor based control system allows for the very low power consumption offered by the interactive ECO mode which provides efficiencies as high as 97%. PowerGem Plus RT switches instantaneously to online double conversion operation automatically when the mains becomes unstable and fluctuates outside the normal frequency and voltage parameters.

- True online double conversion
- Digital Signal Processor (DSP) technology
- Wide input voltage (110V – 300V)
- Tower or Rackmount convertible design
- Unity output power factor (optional 0.9pf)
- Hot swappable battery design (optional for 6-10kVA)
- Intelligent self-diagnostics
- Pure Sinewave output
- Multiple communication ports
- Emergency Power Off (EPO) function
- Long runtime versions
- Automatic battery test function
- Configurable battery voltage (6-10kVA)
- ECO mode operation for energy saving
- Programmable frequency converter mode
- Scalable redundancy parallel ready (6-10kVA)
- Dust filter for hazardous environments
- Lithium-ion batteries optional

### WIDE INPUT VOLTAGE

Part of the unique design of the PowerGem Plus RT is to improve the performance in extreme site conditions with a wide input voltage window, ranging from 110 volts to 300 volts, without the need for the system to transfer into Battery Mode.

### HOT SWAPPABLE BATTERIES

A key advantage of the PowerGem Plus RT range of UPS is hot swappable batteries as this feature allows the user to replace batteries during operation without interruption to the load.

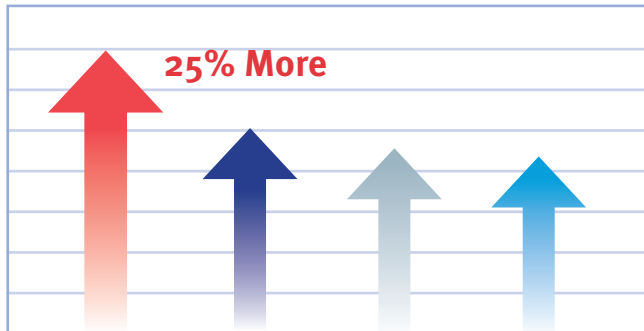


\*Lead-acid batteries only

## PowerGem Plus RT Features

### UNITY POWER FACTOR

The PowerGem Plus RT range adopts DSP and highly efficient electronic IGBT inverter technology providing one of the highest power density ratios in the UPS industry. Advanced inverter circuitry delivers unity power factor maximising power output.



### PARALLEL READY N+X REDUNDANCY

The PowerGem Plus RT 6-10kVA models are able to be connected directly to the user's distribution system. Models can be used in simple parallel operation with up to 4 units, allowing scalability for increased power capacity and improved reliability due to the redundancy operation. The parallel system can be connected to a common battery if required.



### PROGRAMMABLE FREQUENCY CONVERTER

The PowerGem Plus RT range may be used as a frequency converter. Simple programming through the front LCD panel will allow you to lock the output frequency at 50Hz or 60Hz to suit frequency sensitive equipment.

### CONFIGURABLE BATTERY VOLTAGE

Each 6-10kVA UPS within the range has the flexibility to configure battery voltages from a 20 block system to either 16 or 18 blocks depending on application and runtime requirements.

### COMMUNICATION INTERFACE

This feature will allow either the USB or RS232 communication port to work with an SNMP simultaneously. The internal slot is provided for remote control and monitoring agents like SNMP or relay cards.



### LOW NOISE LEVEL

More often the PowerGem Plus RT range will be installed in an office workspace and the environment will be an important factor in the design. Therefore, by using modern high frequency technology the noise dissipation is reduced to less than 50dBA for smaller units.

### LONG RUNTIME APPLICATIONS

For mission critical applications requiring longer runtimes additional matching battery cabinets can be added. These have been designed both technically and aesthetically to complement the UPS, forming a combined unit which can be easily located without the need for special site considerations.

For business continuity requiring very long runtimes the PowerGem range offers larger built-in chargers which can be adjusted from the LCD control panel to provide faster recharge capability.

Both Lead Acid (VRLA) and Lithium Ferro Phosphate (LFP) battery options are available.



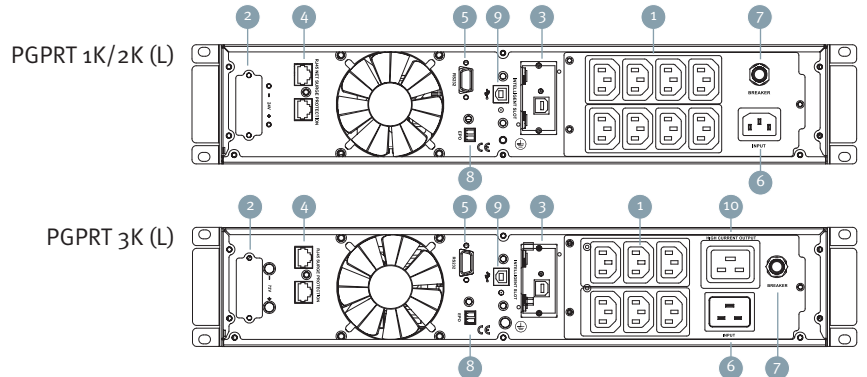
# PowerGem Plus RT

## Technical Specification for the 1-3kVA



MODEL	PGPRT 1000 (L)	PGPRT 2000 (L)	PGPRT 3000 (L)	
Power Rating VA / Watts	1000VA / 1000W	2000VA / 2000W	3000VA / 3000W	
<b>INPUT</b>				
Nominal Voltage	200 / 208 / 220 / 230 / 240 Vac			
Voltage Range	110 - 300 Vac (load dependent)			
Frequency Range	40 - 70 Hz			
Power Factor	>0.99 @ 100% Load			
<b>OUTPUT</b>				
Nominal Voltage	>200 / 208 / 220 / 230 / 240 Vac			
AC Voltage Regulation (Battery Mode)	±1%			
Frequency Range (Synchronised Range)	47 - 53 Hz or 57 - 63 Hz			
Frequency Range (Battery Mode)	50/60 Hz ±0.1% Hz			
Crest Factor	3:1			
Harmonic Distortion (Linear Mode)	≤3% THD			
Transfer Time (AC to Battery)	Zero			
Waveform	Pure Sinewave			
<b>EFFICIENCY</b>				
AC Mode	>88%	>92%	>92%	
ECO Mode	>95%	>96%	>97%	
Battery Mode	>86%	>88%	>90%	
<b>BATTERY</b>				
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries			
Battery DC Voltage	24 or 36 volts	48 volts	72 volts	
Typical Recharge Time	4 hours recover to 90% capacity			
Charging Current (max.)	Standard Models	1A		
	Long Runtime Models	12A adjustable by LCD display		
<b>GENERAL</b>				
Operating Humidity	20 - 90% RH @ 0 - 40°C (non-condensing)			
Acoustic Noise Level	≤50 dB @ 1 metre			
Management Software	Included			
Standard Model	Dimensions (mm) WxDxH	438 x 325 x 88 (24 vdc option) / 438 x 460 x 88 (36 vdc option)	438 x 460 x 88	438 x 600 x 88
	Net Weight (kgs)	11.3	19.1	26.2
Long Runtime Model	Dimensions (mm) WxDxH	438 x 325 x 88	438 x 435 x 88	
	Net Weight (kgs)	5.6	8.3	8.6

- 1 Output Receptacles (10A)
- 2 Battery Terminal
- 3 SNMP Intelligent Slot
- 4 Network/Fax/Modem Surge Protection
- 5 RS-232 Communication Port
- 6 AC Input
- 7 Input Circuit Breaker
- 8 EPO
- 9 USB Communication Port
- 10 Output Receptacle (16A)



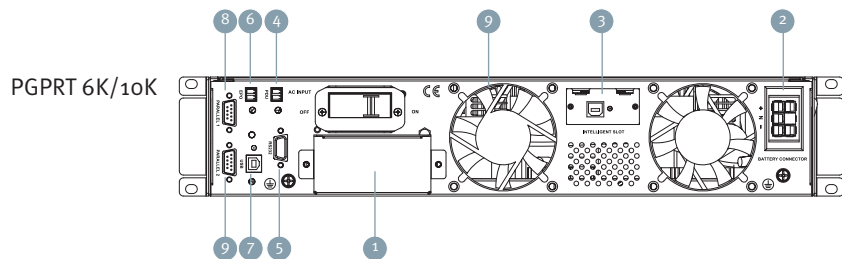


## PowerGem Plus RT

### Technical Specification for the 6-10kVA

MODEL	PGPRT 6000	PGPRT 10K
Power Rating VA / Watts	6kVA / 6kW	10kVA / 10kW
<b>INPUT</b>		
Nominal Voltage	208 / 220 / 230 / 240 Vac	
Voltage Range	110 - 300 Vac (load dependent)	
Frequency Range	45 - 55 Hz at 50 Hz / 54 - 66 Hz at 60 Hz (auto sensing)	
Power Factor	>0.99 @ 100% Load	
<b>OUTPUT</b>		
Nominal Voltage	>200 / 208 / 220 / 230 / 240 Vac	
AC Voltage Regulation (Battery Mode)	±1%	
Frequency Range (Synchronised Range)	45 - 55 Hz or 54 - 66 Hz (auto select)	
Frequency Range (Battery Mode)	50/60 Hz ±0.01 Hz	
Crest Factor	3:1	
Harmonic Distortion (Linear Mode)	≤3% THD	
Transfer Time (AC to Battery)	Zero	
Waveform	Pure Sinewave	
<b>EFFICIENCY</b>		
AC Mode	>93.5%	
ECO Mode	>97.5%	
Battery Mode	>89%	>88%
<b>BATTERY</b>		
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries	
Battery DC Voltage	External matching battery cabinet – 192/216/240 volts	
Typical Recharge Time	4 hours recover to 90% capacity	
Charging Current (max.)	10A adjustable by LCD display	
<b>GENERAL</b>		
Operating Humidity	20 - 90% RH @ 0 - 40°C (non-condensing)	
Acoustic Noise Level	<55 dB @ 1 metre	
Management Software	Included	
UPS Module	Dimensions (mm) WxDxH	438 x 725 x 88
	Net Weight (kgs)	15
BCRT20No09 Battery Cab.	Dimensions (mm) WxDxH	438 x 585 x 133
	Net Weight (kgs)	64

- 1 Input and Output Terminals
- 2 Battery Terminal
- 3 SNMP Intelligent Slot
- 4 PDU Communication
- 5 RS232 Communication Port
- 6 EPO
- 7 USB Communication Port
- 8 Parallel Port 1
- 9 Parallel Port 2





# PowerGem Plus RT-LFP UPS

Technical Specification for the 1-3kVA



MODEL-UPS	PGPRT 1000LFP	PGPRT 2000LFP	PGPRT 3000LFP
Power Rating kVA / Watts	1000VA / 1000W	2000VA / 2000W	3000VA / 3000W
<b>INPUT</b>			
Nominal Voltage	200 / 208 / 220 / 230 / 240 Vac		
Voltage Range	110-300 Vac (load dependent)		
Frequency Range	40-70 Hz		
Power Factor	≥0.99 @ 100% Load		
<b>OUTPUT</b>			
Nominal Voltage	200 / 208 / 220 / 230 / 240 Vac		
Frequency Range (Synchronised Range)	47-53 Hz or 57-63 Hz		
Frequency Range (Battery Mode)	50/60 Hz ±0.1% Hz		
Crest Factor	3:1		
Harmonic Distortion (Linear Mode)	≤3% THD		
Transfer Time (AC to Battery)	Zero		
Waveform	Pure Sinewave		
<b>EFFICIENCY</b>			
AC Mode	≥88%	≥92%	≥92%
ECO Mode	≥95%	≥97%	≥97%
Battery Mode	≥86%	≥88%	≥90%



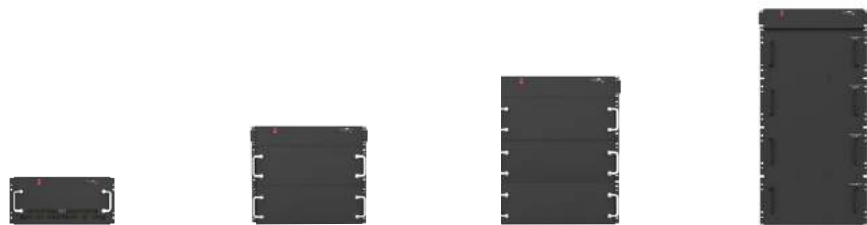
MODEL - BATTERY	BCRT48VLFP50	BCRT48VLFP100
Battery Type	Lithium Ferro Phosphate (LiFePO <sub>4</sub> )	
Nominal Voltage (Vdc)	48	
Nominal Capacity (Ah)	50	100
Nominal Power (WH)	2400	4800
Operating Temperature	Charging 0°C-50°C; discharging 20°C - +55°C	
Dimensions (mm) WxDxH	440 x 460 x 131	440 x 460 x 131
Net Weight (kgs)	28	43

## PowerGem Plus RT-LFP UPS

Technical Specification for the 6-10kVA



MODEL-UPS	PGPRT 6000LFP	PGPRT 10LFP
Power Rating kVA / Watts	6kVA / 6kW	10kVA / 10kW
<b>INPUT</b>		
Nominal Voltage	220 / 230 / 240 Vac	
Voltage Range	120-276 Vac (load dependent)	
Frequency Range	42-55 Hz at 50 Hz / 54-66 Hz at 60 Hz (auto sensing)	
Power Factor	>0.99 @ 100% Load	
<b>OUTPUT</b>		
Nominal Voltage	220 / 230 / 240 Vac	
Frequency Range (Synchronised Range)	45-65 Hz (auto select)	
Frequency Range (Battery Mode)	50/60 Hz ±0.1 Hz	
Crest Factor	3:1	
Harmonic Distortion (Linear Mode)	≤3% THD	
Transfer Time (AC to Battery)	Zero	
Waveform	Pure Sinewave	
<b>EFFICIENCY</b>		
AC Mode	>92.5%	
ECO Mode	>92.3%	
Battery Mode	>89%	>88%
<b>BATTERY</b>		
Battery DC Voltage Nominal	±96 Volts	
Charging Current (max.)	10A adjustable by LCD display	
<b>GENERAL</b>		
Operating Humidity	20-90% RH @ 0-40°C (non condensing)	
Acoustic Noise Level	≤55 dB @ 1 metre	
Management Software	Included	
UPS Module	Dimensions (mm) WxDxH	438 x 725 x 88
	Net Weight (kgs)	15



MODEL - BATTERY	BCR96VLFP12	BCR96VLFP50	BCR96VLFP100	BCR96VLFP150
Battery Type	Lithium Ferro Phosphate (LiFePO <sub>4</sub> )			
Nominal Voltage (Vdc)	±96 Volts			
Nominal Capacity (Ah)	12	50	100	150
Nominal Power (WH)	2304	9600	19200	28800
Operating Temperature	Charging 0°C-50°C; discharging 20°C - +55°C			
Dimensions (mm) WxDxH	440 x 550 x 220	440 x 570 x 444	440 x 460 x 800	440 x 460 x 978
Net Weight (kgs)	46.5	110	186	270

# PowerPrime™ Series

## True on-line Double Conversion UPS

### 10kVA – 30kVA

» Sophisticated

» Reliable

» Intelligent

The PowerPrime is the ultimate in UPS design with a full range of options and accessories to meet the demands of sophisticated network environments, ideally suited for mission critical applications such as servers, network and telecommunication equipment.

The PowerPrime professional range uses state of the art technology and components to provide maximum network protection where the load is continuously supplied by the inverter with a filtered and stabilised waveform and frequency to the highest standards.



» Server Rooms

» Financial Services

» Healthcare

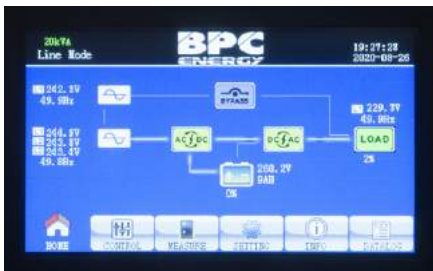
» IT Solutions

» Telecommunications

## PowerPrime Features

### ADVANCED TOUCH SCREEN WITH LCD DISPLAY

PowerPrime UPS have an advanced colour 5 inch touch screen providing precise LCD displays with real time mimic status and parameter readings via the intelligent Digital Signal Processor (DSP) controller. Touch any of the control, measure, setting, information or data log sub menu icons to enter into various sub screens.



The PowerPrime main screen can provide live operational display of the mains supply in both the Dual Feed Input and load output conditions with full graphical appreciation through five icons with touch control so that the sub menus are easily accessible.



All PowerPrime UPS include the latest DSP software technology to provide dynamic self testing which is an effective function that can be executed manually on restart to determine the UPS system is fully operational and that the site conditions are acceptable.

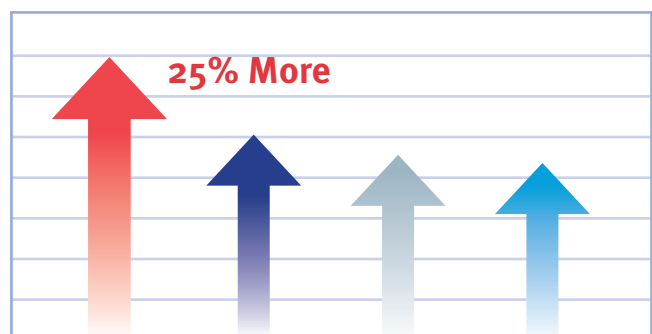


The panel provides extensive diagnostics, controls and settings with simple touch screen pages allowing access to a variety of information and data. Measuring real parameters including AC input and output voltage, power conditions in VA/Watts/Power Factor, frequency, battery voltage, load levels, battery backup time and modes of operation.

- True On Line Double Conversion
- 1/1, 1/3, 3/3 configuration depending on model
- Advanced touch screen display
- High AC/AC efficiency up to 96.6%
- Intelligent event history / 500 alarm logs
- Unity output power factor
- Wide input voltage (100V 300V)
- Smart battery management
- Larger internal charger for long runtimes
- Parallelabable up to 4 units as standard
- Standard dual feed configuration
- Adjustable internal battery voltage
- Digital signal (DSP) technology
- Multiple communication ports
- ECO mode operation for energy saving
- Matching battery cabinets

### UNITY POWER FACTOR

The PowerPrime range adopts DSP and highly efficient electronic IGBT inverter technology providing one of the highest power density ratios in the UPS industry. Advanced inverter circuitry delivers unity power factor maximising power output.



### ENVIRONMENTALLY FRIENDLY ENERGY SAVING

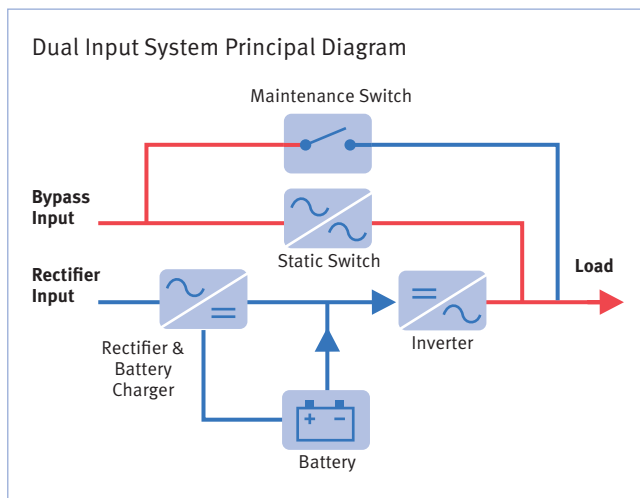
The intelligent microprocessor based control system allows for the very low power consumption offered by the interactive ECO Mode which provides efficiencies as high as 99%. PowerPrime switches instantaneously to online double conversion operation automatically when the mains becomes unstable and fluctuates outside the normal frequency and voltage parameters.



## PowerPrime Features

### DUAL FEED INPUT

The PowerPrime Dual Feed Input design increases the levels of reliability and availability of the UPS system which is more commonly found in larger systems. Dependability is ensured by providing from the same source a secondary path for the bypass supply to eliminate the risk of any problems with the incoming rectifier input. This superior protection allows the load to be supplied directly from the mains power source.



### LONGER RUNTIME APPLICATIONS

For mission critical applications requiring longer runtimes or higher specification batteries, PowerPrime UPS employ an internal intelligent charging system with up to 12 Amps configured by the front touch screen. Additional matching battery cabinets can easily be added and have been designed both technically and aesthetically to complement the UPS, forming a combined unit which can be easily positioned.



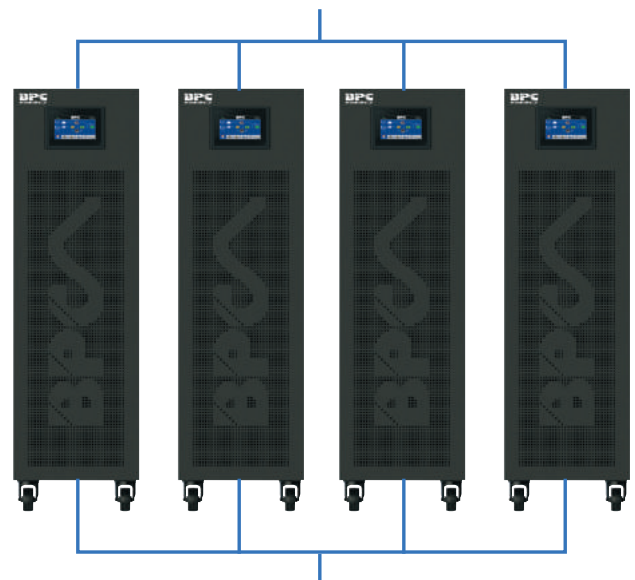
\*Product may differ from image

### MULTIPLE COMMUNICATION OPTIONS

The USB communication port can be used to locally monitor the UPS system. Internal slot is provided for SNMP communication. 8 output dry ports and 6 input dry ports are provided as standard to allow further communication with UPS.

### PARALLEL READY

The BPC philosophy is both simple and elegant with each model provided parallel ready. The UPS can be connected together without any requirement to install further control circuits into the UPS system. BPC would always recommend installing one of our parallel switch panels to provide correct cable protection and aid all ongoing maintenance. Models can be used in simple parallel operation with up to 4 units, allowing scalability for increased power capacity and improved reliability due to the redundancy operation.



### EXTERNAL MAINTENANCE BYPASS SWITCH CONNECTION

The PowerPrime system has an easy connection port for direct interface to an EMBS (External Maintenance Bypass Switch). This connection allows a fast communication with the internal static switch should the EMBS be closed when the UPS is operating on inverter. The EMBS connection provides security against the external switchgear being operated incorrectly. This feature helps to protect the UPS during all operations.

### INPUT CONFIGURATION

The PowerPrime 10kVA and 20kVA single phase output models have configurable input terminal connections and are provided with multifunctional jumpers to allow either single phase or three phase input connections. All PowerPrime models are fitted with large connection terminals and secure gland plates to allow secure cable connection to the UPS.

## PowerPrime Features

### SMART BATTERY MANAGEMENT

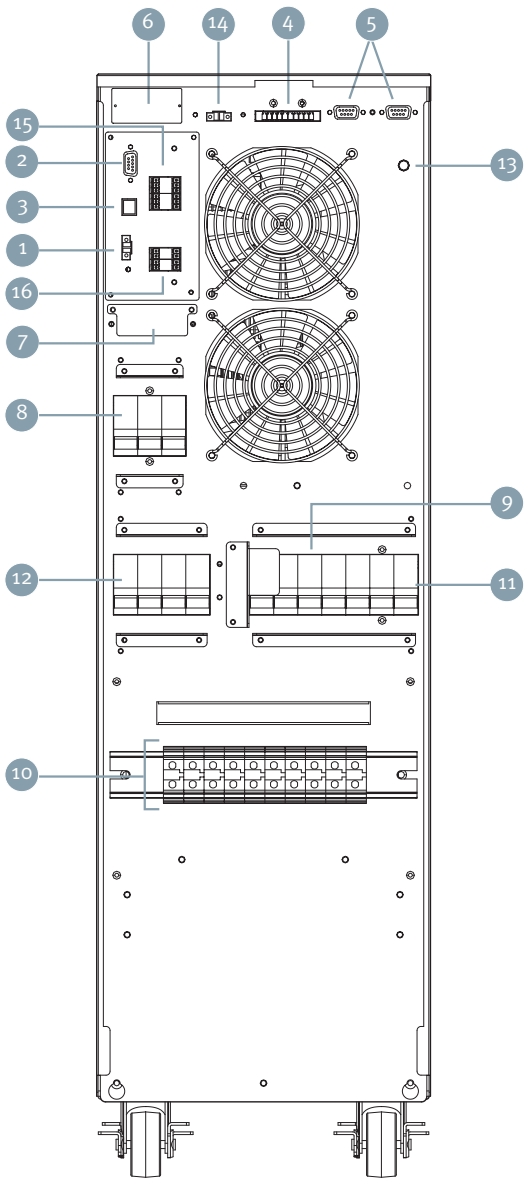
Intelligent battery management combined with exceptional 95.5% DC/AC inverter efficiency means that PowerPrime battery sizing is optimised and greater runtimes are achieved. Maximum battery care is maintained by a three level charging system to achieve the best performance and operating life possible. Unique self learning function predicts more accurate backup autonomy and improves the information for the user.

### COMPACT DESIGN

The PowerPrime system offers one of the smallest footprints available on the market, providing exceptional power density of 122KW/m<sup>3</sup> at 30kVA/30kW capacity with battery in one cabinet, for the ever space conscious IT manager.

### WIDE INPUT VOLTAGE

Part of the unique design of the PowerPrime is to improve the performance in extreme site conditions with a wide input voltage window, ranging from 110 Volts up to 300 Volts, without the need for the system to transfer into Battery Mode, thus not only improving the efficiency of the system, but also maximising the life of the battery.



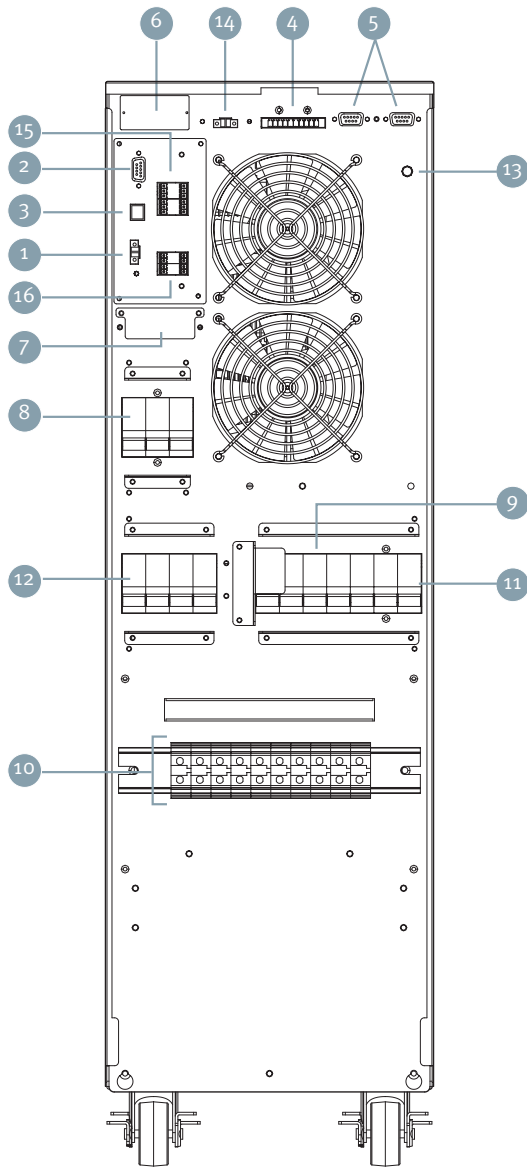
- 1 Emergency power off connector (EPO connector)
- 2 RS 232 communication port
- 3 USB communication port
- 4 Parallel share current port
- 5 Parallel port
- 6 Intelligent slot SNMP or DRY port
- 7 External battery connector
- 8 Line input circuit breaker
- 9 Maintenance bypass switch
- 10 Input/Output terminals
- 11 Bypass input circuit breaker
- 12 Output Switch
- 13 Service start
- 14 External Maintenance Bypass Switch connector (EMBS)
- 15 Input DRY port terminals
- 16 Output DRY port terminals

### CONFIGURABLE BATTERY VOLTAGE

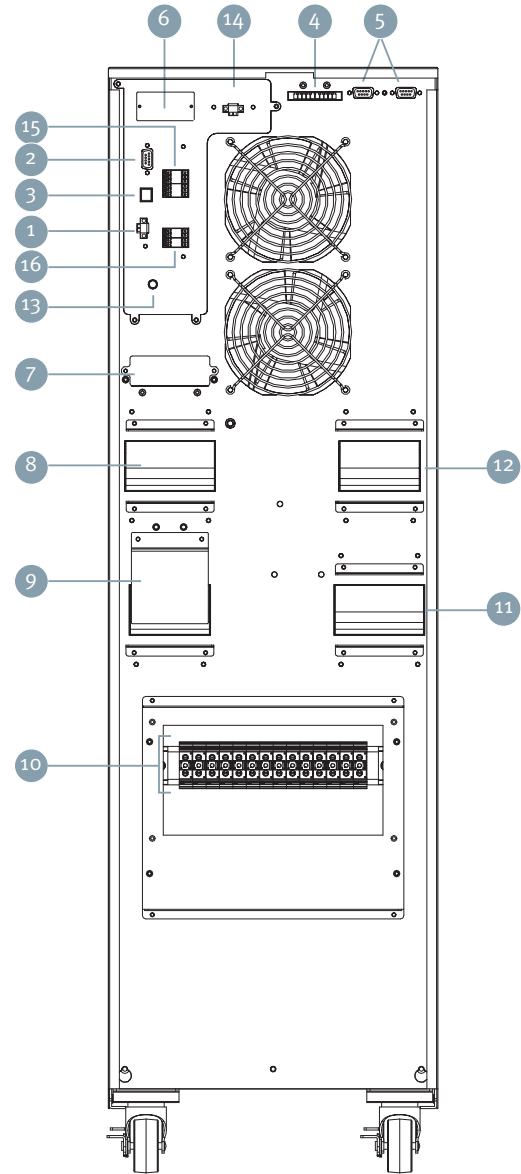
The 20kVA single phase output version within the range has the flexibility to configure battery voltages from 40 block +/- 20 to either +/-16 or +/-18 blocks depending on application and runtime requirements.

Single Phase Output 10kVA-20kVA

## PowerPrime Features



Three Phase Output 10kVA-20kVA



Three Phase Output 30kVA

- ① Emergency power off connector (EPO connector)
- ② RS 232 communication port
- ③ USB communication port
- ④ Parallel share current port
- ⑤ Parallel port
- ⑥ Intelligent slot SNMP or DRY port
- ⑦ External battery connector
- ⑧ Line input circuit breaker

- ⑨ Maintenance bypass switch
- ⑩ Input/Output terminals
- ⑪ Bypass input circuit breaker
- ⑫ Output Switch
- ⑬ Service start
- ⑭ External Maintenance Bypass Switch connector (EMBS)
- ⑮ Input DRY port terminals
- ⑯ Output DRY port terminals



## PowerPrime - Online Double Conversion UPS

### Three/Single Phase Input and Single Phase Output – Technical Specification

MODEL	PPRIME 10k		PPRIME 20k	
Power Rating kVA / Watts	10kVA / 10kW		20kVA / 20kW	
<b>INPUT</b>				
Nominal Voltage	208*/220/230/240VAC (1PH+N+PE) or 380/400/415VAC (3PH+N+PE)			
Voltage Range	Low Line	110 VAC(PH+N) ±3% at 50% load 176 VAC (PH+N) ±3% at 100% load		
	High Line	300 VAC(PH+N) ±3% at 50% load 276 VAC (PH+N) ±3% at 100% load		
Frequency Range	46-54Hz at 50Hz / 56-64Hz at 60Hz (auto sensing)			
Phase	3 Phase with Neutral or 1 Phase with Neutral (Single or Dual Input)			
Power Factor	≥ 0.99 at 100% Load			
<b>OUTPUT</b>				
Phase	1 Phase with Neutral			
Nominal Output	208*/220/230/240 VAC			
AC Voltage Regulation (Battery Mode)	±1%			
Frequency Range (Synchronised Range)	46-54Hz or 56-64Hz			
Frequency Range (Battery Mode)	50 Hz ±0.1 Hz or 60Hz ±0.1 Hz			
Overload	100%-110%: 60 mins; 110%-125%: 10mins; 125%- 150%: 1 min; >150% : 400ms			
Current Crest Ratio	3:1 max			
Harmonic Distortion	≤2% @ 100% Linear Load; ≤5% @ 100% Non linear Load			
Transfer Time	Zero			
Output Power Factor	1			
<b>EFFICIENCY</b>				
AC Mode	>96.6%			
ECO Mode	99%			
Battery Mode	>95.5%			
<b>BATTERY</b>				
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries			
Battery Numbers	20 (10+10) pcs (up to 2 strings internal 40 pcs)		40 (20+20) pcs (1 string internal adjustable 30-40 pcs)	
Recharge Time	9 hours recover to 90% capacity			
Charging Current (max)	1 to 12A (Adjustable via the display)			
Charging Voltage	±136.5 VDC ±1%			
<b>GENERAL</b>				
Operating Temperature	0-40°C (the battery life will be effected above 25°C)			
Operating Humidity	>95% and non condensing			
Operating Altitude	<1000m**			
Acoustic Noise Level	≤55dB @ 1 metre		≤58dB @ 1 metre	
Smart RS 232 or USB	Supports Windows® 2000/2003/XP/Vista/2008/7/8/10, Linux, Unix, and MAC			
Dimensions WxDxH (mm)	250 x 710 x 826			
Net Weight (kg)	43		44	

\* Derate capacity up 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.

Note For Parallel operation Derate capacity to 90%





## PowerPrime - Online Double Conversion UPS

### Three Phase Input and Output – Technical Specification

MODEL	PPRIM310	PPRIME320	PPRIME330
Power Rating kVA / kW	10kVA / 10kW	20kVA / 20kW	30kVA / 30kW
<b>INPUT</b>			
Nominal Voltage	380/400/415VAC (3PH+N+PE)		
Voltage Range	Low Line	110 VAC(PH+N) ±3% at 50% load 176 VAC (PH+N) ±3% at 100% load	
	High Line	300 VAC(PH+N) ±3% at 50% load 276 VAC (PH+N) ±3% at 100% load	
Frequency Range	46-54Hz at 50Hz / 56-64Hz at 60Hz (auto sensing)		
Phase	3 Phase with Neutral		
Power Factor	≥ 0.99 at 100% Load		
<b>OUTPUT</b>			
Phase	3 Phase with Neutral		
Nominal Output	380/400/415 VAC (Ph-Ph) and 220/230/240 VAC (Ph N)		
AC Voltage Regulation (Battery Mode)	±1%		
Frequency Range (Synchronised Range)	46-54Hz or 56-64Hz		
Frequency Range (Battery Mode)	50Hz ±0.1Hz or 60Hz ±0.1Hz		
Overload	100%-110%: 60 mins; 110%-125%: 10mins; 125%-150%: 1 min; >150% : 400ms		
Current Crest Ratio	3:1 max		
Harmonic Distortion	≤2% @ 100% Linear Load: ≤5% @ 100% Non Linear Load		≤1% @ 100% Linear Load: ≤3% @ 100% Non Linear Load
Transfer Time	Zero		
Output Power Factor	1		
<b>EFFICIENCY</b>			
AC Mode	>95.5%		
ECO Mode	98.5%		
Battery Mode	94.5%		
<b>BATTERY</b>			
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries		
Battery Numbers	20 (10+10) pcs (up to 2 strings internal 40pcs)	40 (20 + 20) pcs	32 (+/-16) - 40 (+/-20) pcs external 32 (+/-16) pcs for internal batteries
Recharge Time	9 hours recover to 90% capacity		
Charging Current (max)	1 to 12A (adjustable via the display)		
Charging Voltage	±136.5 VDC ±1%	±218 VDC ±1%	±218 VDC ±1%
<b>GENERAL</b>			
Operating Temperature	0-40°C (the battery life will be effected above 25 C)		
Operating Humidity	>95% and non condensing		
Operating Altitude	<1000m**		
Acoustic Noise Level	<55dB @ 1 metre	<58dB @ 1 metre	<65dB @ 1 metre
Smart RS 232 or USB	Supports Windows® 2000/2003/XP/Vista/2008/7/8/10, Linux, Unix, and MAC		
Dimensions WxDxH (mm)	250 x 710 x 826		300 x 815 x 1000
Net Weight (kg)	46	47	74

\* Derate capacity up 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.

Note For Parallel operation Derate capacity to 90%

\*\*\* Healthcare options - external batteries only

## PowerPro™ EF300 Series

Three Phase Input & Output Online Transformerless UPS  
10kVA – 600kVA (Parallelable up to 4.8mVA)

» Eco-Friendly

» Intelligent

» Space Saving

VFI



The PowerPro Eco-Friendly 300 Series UPS is a combination of BPC's advanced Digital Signal Processor (DSP) control technology and a firm pursuit of a green manufacturing philosophy, resulting in a UPS design utilising the latest generation power components and improved conversion circuit topology in order to optimise maximum efficiency.

With minimum space, fewer components and controlled levels of noise pollution, it has a significantly reduced environmental impact. Therefore, with the Eco-Friendly UPS range it is feasible to design a UPS with reduced carbon footprint whilst achieving clean, continuous power for industrial and computing applications.

- » Data Centres
- » Financial services
- » Healthcare
- » Industrial
- » Telecommunications

## PowerPro EF Range

### PowerPro EF 300C Series

10kVA – 30kVA



#### EF 300 Compact Features

- Compact space saving design
- 3 level rectifier / 3L inverter topology
- 0.9 output power factor (unity available 10 20kVA) 0.8 output power factor on 30kVA model
- Advanced backlit display
- Low THDi / high input power factor / high efficiency up to 94%
- Higher DC AC efficiency for smaller battery designs
- Selectable input/output voltage/frequency range

### PowerPro EF 300R Series

10kVA – 100kVA  
250kVA – 400kVA



#### EF 300R Features

- 3 level rectifier / 3L inverter topology
- 0.9 output power factor (unity available)
- Advanced backlit display
- Low THDi / high input power factor / high efficiency up to 95%
- Selectable input/output voltage/frequency range
- Parallelable up to 8 units
- Increased reliability due to DSP design control

### PowerPro EF 300XU Series

100kVA – 400kVA



#### EF 300XU Features

- 3 level rectifier / 3L inverter topology
- Unity output power factor as standard
- Advanced TFT touch screen display
- Low THDi / high input power factor / high efficiency up to 96%
- Selectable input/output voltage/frequency range
- Parallelable up to 8 units
- Changing colour logo display depending on operational state
- High inverter AC/DC efficiency
- Compact model which provides market leading high energy density with high power density output

### PowerPro EF 300TR Transformer Series

10kVA – 600kVA



#### EF 300TR Features

- Galvanic isolation on the inverter output
- 3 level rectifier / 3L inverter topology
- 0.9 output power factor
- Advanced backlit display
- Selectable input/output voltage/frequency range
- Parallelable up to 8 units
- Suitable for harsh industrial environments

### PowerPro EF 300LIFT Series

2.7kVA – 23kVA



#### EF LIFT Features

- A unique combination of the EF300R series and intelligent regenerative load braking system
- Designed to meet BS 9999 Annex G specification
- 3 level rectifier / 3L inverter topology
- 0.9 output power factor (unity available)
- ECO mode function required
- Low THDi / high input power factor
- High efficiency over 98%

## PowerPro EF Features

### MODULAR DSP ARCHITECTURE

The PowerPro EF300 Range is designed with internal DSP architecture, with separate DSP for Rectifier, Inverter and display. With the use of a CAN Bus System, other modules can be added easily to update or configure the system for multiple use design.

The modular DSP design future proofs your UPS:

- Latest features can be easily upgraded
- Multiple applications for Lifts, Medical, Solar.



### INCREASED RELIABILITY

PowerPro EF300R/ EF300TR/ EF300XU series are designed to allow connectivity in parallel of up to 8 units, providing a total power capacity of 4.8 mVA. The system can also be configured to provide N + 1 redundancy offering the highest reliability. This flexibility allows you to install a system that can grow with your business power requirements.

### ADVANCED COMMUNICATIONS

The PowerPro EF300 Range comes with internal and external SNMP options with full environmental features.

- Four fully programmable dry port relays as standard upgradable to twelve, with over 65 selectable alarms on the EF300R, EF300XU, EF300TR & EF300 LIFT ranges option to upgrade to 12 port card
- Three fully programmable dry port relays as standard upgradable to twelve, with over 65 selectable alarms on the EF300 Compact Series.
- Dedicated communication port for service engineer diagnosis and adjustment via laptop or notepad on the EF300R, EF300XU, EF300TR & EF300 LIFT ranges
- Emergency Power Off (EPO) connection for external switching control for the entire EF300 range.

### INTELLIGENT BATTERY MANAGEMENT & PROTECTION

- Internal batteries in standard chassis up to 80kVA
- Deep discharge protection
- Low AC ripple
- Interactive external battery circuit breaker position sensing - optional
- Interactive battery circuit breaker control - optional
- Two stage battery self test, a short test and an intensive test with adjustable test intervals
- Adjustable battery charger system for short and long runtimes
- Optional external temperature compensation on the EF300R, EF300XU, EF300TR & EF300 LIFT ranges.





## PowerPro EF Features

### LOW RUNNING COSTS

The PowerPro EF300 Series operates with low Total Harmonic Distortion (THDi) to less than 5% at full load. The low harmonics help to reduce overheating of input transformers and prevents over sizing input cables and protection devices.

The input power factor of the system runs close to unity at full load, helping to reduce operating costs from utility suppliers charging premium rates.

The low THDi and close to unity power factor mean better matching of generators and reduced costs due to oversizing.

### FLEXIBILITY

A fully protected system with the flexibility to meet all demands:

- Multiple operating modes including Online and ECO Mode
- Frequency converter with standard 50 Hz Input, adjustable output to 60 Hz.
- Adjustable 'walk in' time for generator friendly operation
- Dual feed inputs – separately feeding both the Rectifier and bypass lines
- Cold Start Feature – start up with no mains available.
- Input and output transformer options
- All major parameters, such as bypass synchronisation are fully programmable

### SPACE SAVING DESIGN

The PowerPro EF300 Series has been designed with class leading power density, maximising valuable floor space in your data centre. The range boasts small footprints of 0.32m<sup>2</sup> up to 30kVA, 0.44m<sup>2</sup> up to 160kVA, 0.68m<sup>2</sup> up to 250kVA and 0.97m<sup>2</sup> up to 500kVA.

### HARSH ENVIRONMENTS

Some applications can have severe surroundings where higher internal protection might be required.

The PowerPro EF300 Series can be offered with IP31 or IP42 options (others on request) to safeguard against unstable environments where the need to counter ingress of harmful particles and liquids is essential.



### ADVANCED GRAPHIC DISPLAY

A precise graphic backlit display providing real time status and parameter readings via its own DSP controller. The EF home screen shows all modular elements of the UPS in a clear and precise manner as well as an overview of the system operation.

An easy to navigate control pad allows for a complete and comprehensive overview of measurements, controls and settings with comprehensive event logging up to 192 event memory record system (total 7000 alarms or warnings).

### INTELLIGENT MANAGEMENT & MAINTENANCE SYSTEM

The PowerPro EF300 Series has the most advanced built in management and maintenance system (MMS). The MMS has dynamic self-diagnostics and analyses all the internal sub assemblies, providing the engineer with recommendations on what settings need adjustment and calibration.

Fast PCB replacement with all settings and adjustments are easily uploaded via the engineer's laptop. The MMS system built into the UPS reduces the mean time to repair (MTTR) by almost half compared to other UPS systems.

Four service meters track critical areas within the UPS alerting that maintenance is required.



2x 80kVA High Internal Protection IP42 UPS supporting residential lifts in the UK

## POWERPRO EF MEDICAL

The PowerPro EF300 MEDICAL range has been specially developed to use on MRI Scanners and medical environments.

With specifically designed DSP software, the EF MEDICAL provides better operation against MRI loads that have transformers at their input.

The MEDICAL UPS also has better operation against short circuits and provides higher current inrush capacity to prevent problems caused by IGBT saturation.

The system has the capability to accommodate an Internal Galvanic Isolation Transformer up to 60kVA whilst systems up to 600kVA have the Isolation Transformer provided in a matching battery cabinet design.

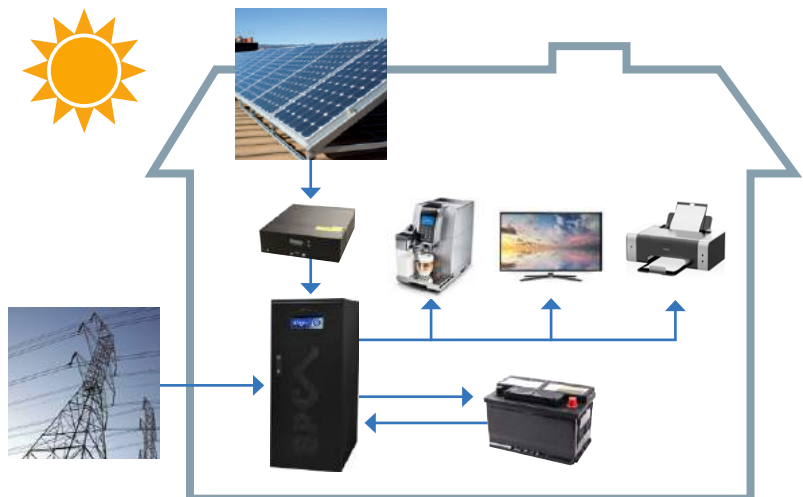


## POWERPRO EF HYBRID

The PowerPro EF300 HYBRID range senses the availability of solar power, grid power and the battery power for supplying connected loads, using the most economical and ecological combination of these energy sources. The system primarily works from solar energy to return your investment.

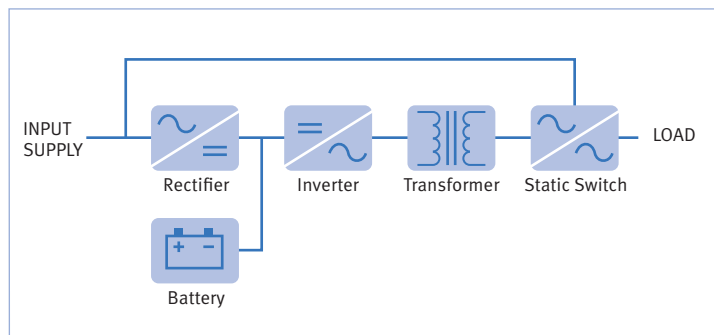
**MPPT** algorithm provides maximum energy available in the PV panels to the load connected at the output of the solar converter which arranges power redundancy automatically.

The battery bank stores the unused clean energy and protects against power failures.



## POWERPRO EF 300TR

The PowerPro EF300TR series completes the range offering a UPS incorporating galvanic isolation on the output of the inverter. This technology enables complete galvanic isolation between the DC bus and the output to the loads to ensure power continuity. The series is available from 10kVA to 600kVA, providing a solution for any application.





## PowerPro EF300 Compact Series

Three Phase Input & Output Online Transformerless UPS 10kVA – 30kVA

### Technical Specification

MODEL	EF310C	EF315C	EF320C	EF330C
Power Rating kVA / kW	10 / 9	15 / 13.5	20 / 18	30 / 24
<b>INPUT</b>				
Voltage	380 / 400 Vac 3P + N + G $\pm 20\%$ (415 Vac + 15%, -25% optional)			
Frequency	50 Hz / 60 Hz $\pm 5\%$			
Power Factor (at 100% load)	$\geq 0.99$			
THD (at 100% load)	$\leq 4\%$ (depends on mains input conditions)			
By-pass Voltage	380 / 400 Vac 3P + N, 4 wires, $\pm 10\%$			
Protection	Fuses, Voltage & Frequency Tolerance			
<b>OUTPUT</b>				
Power Factor	0.9			0.8
Voltage	380/400 VAC 3P + N + G $\pm 1\%$ (415 VAC optional)			
Frequency	50 Hz / 60 Hz			
Frequency Tolerance	Line synchronized: $\pm 2\%$ / Free running $\pm 0.1\%$			
Efficiency (at 100% load)	90%			
Crest Factor	3:1			
Overload Protection	100% - 125% load: 10 min, 125% - 150% load: 1min, >150% load: by pass			
Protection	Fuses, Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting			
Voltage THD	$\leq 2\%$ (at 100% linear load)			
<b>BATTERIES</b>				
Number Battery / Type	60 ( $\pm 30$ ) batteries (Internal battery options available)			
Float Charging Voltage	$\pm 405$ VDC (adjustable)			
End of Discharge Voltage	$\pm 300$ VDC (adjustable)			
Battery Protection	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)			
Automatic Battery Test	Standard: Every 72 hours (adjustable)			
<b>GENERAL</b>				
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, Operating hour meter			
Communication	RS232 Serial port, 4 standard DRY contact alarm relays			
Protection	Power module over temperature, Over current, Temperature high alarms / IP21			
Operating Temperature / Relative Humidity / Altitude	0°C - 40°C / 90% max. (non condensing) / >1000m above sea level			
Acoustic Noise	>55dBA	>57dBA		
Dimensions (mm) WxDxH	300 x 770 x 700 (without battery)			
Weight (kg)	47.5	49.5	51	55
<b>MODEL (with attached battery cab)</b>	<b>EF310CBC9</b>	<b>EF315CBC9</b>	<b>EF320CBC9</b>	<b>EF330CBC9</b>
Dimensions (mm) WxDxH	300 x 800 x 1170 (up to 9ah battery)			
Weight (kg)	75	77	83	83
Comms. Adaptors Optional	SNMP, MODBUS, RS485, Remote Panel, Bacnet			

## PowerPro EF300R Series

10kVA – 100kVA

### Technical Specification



MODEL	EF310R (U)	EF315R (U)	EF320R (U)	EF330R (U)	EF340R (U)	EF360R (U)	EF380R (U)	EF3100R (U)
Power Rating kVA / kW	10 / 9	15 / 13.5	20 / 18	30 / 27	40 / 36	60 / 54	80 / 72	100 / 90
<b>INPUT</b>								
Nominal Voltage	380 / 400 / 415 Vac (3Ph + N + PE)							
Voltage Range	±20 - 40% @ 70% load%							
Frequency	50 Hz / 60 Hz, ±5%							
Power Factor	0.99 @ full load (Unity Power Factor - optional)							
Harmonic Distortion*	<3% @ 100%							
<b>OUTPUT</b>								
Nominal Voltage	380 / 400 / 415 Vac (3Ph + N + PE)							
AC Voltage Regulation	±1%							
Frequency Range	50 Hz or 60 Hz, ±2%							
Power Factor	0.9 (Unity Power Factor optional)							
Crest Factor	3:1							
Harmonic Distortion (Linear Load)	<3% @ 100% load							
Transfer Time	Zero							
Waveform	Sinewave							
<b>EFFICIENCY</b>								
On-Line Mode	Up to 93%							
ECO Mode	Up to 98%							
<b>BATTERY</b>								
Battery Type	VRLA Sealed Lead Acid Maintenance Free Batteries, Nickel Cadmium Batteries							
Battery Numbers	60 (+/-30) battery blocks (internal battery options available)						external	
<b>GENERAL</b>								
Operating Temperature	0 - 40°C							
Operating Humidity	90% (non-condensed)							
Acoustic Noise	<57 dB @ 1 metre			<62 dB @ 1 metre			<65 dB @ 1 metre	
Protection Degree	IP20 (other on request)							
Management Software	Included							
Dimensions (mm) WxDxH	400 x 815 x 1040				515 x 855 x 1440			
Net Weight (kg)	93	97	100	173	197	209	220	
Comms. Adaptors Optional	SNMP, MODBUS, RS485, Remote Panel, Bacnet							

\*Depending on power and input/output conditions





# PowerPro EF300XU Series

## Technical Specification

MODEL	EF3100XU	EF3120XU	EF3160XU	EF3200XU	EF3250XU	EF3300XU**	EF3400XU**
Power Rating kVA / kW	100 / 100	120 / 120	160 / 160	200 / 200	250 / 225	300 / 300	400 / 400
<b>INPUT</b>							
Nominal Voltage	380 / 400 / Vac 3P + N + G						
Voltage Range	±20% at 100% load / 40% at 70% load						
Frequency	50 Hz / 60 Hz, ±10%						
Power Factor	≥ 0.99						
Harmonic Distortion*	≤3% @ 100%						
<b>OUTPUT</b>							
Nominal Voltage	380 / 400 Vac 3F + N						
AC Voltage Regulation	±1%						
Frequency Range	50 Hz / 60 Hz						
Power Factor	Unity			0.9		Unity	
Crest Factor	3:1						
Harmonic Distortion (Linear Load)	≤2% @ 100%						
Transfer Time	Zero						
Waveform	Sinewave						
<b>EFFICIENCY</b>							
On-Line Mode	Up to 95.5%			Up to 96%			
ECO Mode	Up to 98%						
<b>BATTERY</b>							
Battery Type	VRLA Sealed Lead Acid Maintenance Free Batteries, Nickel Cadmium Batteries, Gel Batteries						
Battery Numbers	60 (+/-30) battery blocks external						
<b>GENERAL</b>							
Operating Temperature	0 - 40°C						
Operating Humidity	90% (non-condensed)						
Acoustic Noise	≤62 dBA		≤65 dBA			≤67 dBA	
Protection Degree	IP20 (other on request)						
Management Software	Included						
Dimensions (mm) WxDxH	1440 x 475 x 890					1900 x 1250 x 775	
Net Weight (kg)	210	220	262	270	295	655	
Comms. Adaptors	SNMP, MODBUS, RS485, Remote Panel, Bacnet						

\*Depending on power and input/output conditions

\*\*Launching in 2022

## PowerPro EF300R Series Technical Specification



MODEL	EF300R	EF3400R	EF3500R
Power Rating kVA / kW	300 / 270	400 / 360	500 / 450
<b>INPUT</b>			
Nominal Voltage	380/400 VAC 3P + N + G		
Voltage Range	±20%		
Frequency	50 Hz / 60 Hz ±10%		
Power Factor	≤0.99 @ full load		
Harmonic Distortion*	≤3%		
<b>OUTPUT</b>			
Nominal Voltage	380/400 VAC 3F + N		
AC Voltage Regulation	±1%		
Frequency Range	50 Hz / 60 Hz		
Power Factor	0.9		
Crest Factor	3:1		
Harmonic Distortion (Linear Load)	≤2% @ 100% load		
Transfer Time	Zero		
Waveform	Sinewave		
<b>EFFICIENCY</b>			
On-Line Mode	Up to 95%		
ECO Mode	Up to 98%		
<b>BATTERY</b>			
Battery Type	VRLA Sealed Lead Acid Maintenance Free Batteries, Nickel Cadmium Batteries, Gel Batteries		
Battery Numbers	60 (+/-30) blocks		
<b>GENERAL</b>			
Operating Temperature	0 - 40°C		
Operating Humidity	95% (non-condensed)		
Acoustic Noise	<68 dBA		
Protection Degree	IP20 (other on request)		
Management Software	Included		
Dimensions (mm) WxDxH	1900 x 1250 x 775		
Net Weight (kg)	635	680	890
Comms. Adaptors	SNMP, MODBUS, RS485, Remote Panel, Bacnet		

\*Depending on power and input/output conditions



# PowerPro EF300TR Series

10kVA – 500kVA

## Technical Specification

MODEL	EF310TR	EF320TR	EF330TR	EF340TR	EF360TR	EF380TR	EF3100TR	EF3120TR	EF3160TR	EF3200TR	EF3250TR	EF3300TR	EF3400TR	EF3500TR
Power Rating kVA	10/9	20/18	30/27	40/36	60/54	80/72	100/90	120/108	160/144	200/180	250/225	300/270	400/360	500/400
<b>INPUT</b>														
Nominal Voltage	380 / 400 / 415 Vac (3Ph + N + PE)													
Voltage Range	±2%													
Frequency	50 Hz / 60 Hz ±5%													
Power Factor	0.99 @ full load													
Harmonic Distortion*	≤5% @ 100%													
<b>OUTPUT</b>														
Nominal Voltage	380 / 400 / 415 Vac (3Ph + N + PE)													
AC Voltage Regulation	±2%													
Frequency Range	50 Hz / 60 Hz ±5%													
Power Factor	0.9 @ full load													0.8
Crest Factor	≤3% @ 100%													
Harmonic Distortion (Linear Load)	380 / 400 / 415 Vac (3Ph + N + PE)													
Transfer Time	±2%													
Waveform	Sinewave													
<b>EFFICIENCY</b>														
On-Line Mode	Up to 93.5%													
ECO Mode	Up to 98%													
<b>BATTERY</b>														
Battery Type	VRLA Sealed Lead Acid Maintenance Free Batteries, Nickel Cadmium Batteries, Gel Batteries													
Battery Numbers	56 (+/- 28) blocks external													
<b>GENERAL</b>														
Operating Temperature	0 - 40°C													
Operating Humidity	90% (non-condensed)													
Acoustic Noise	≤57 dB @ 1 metre							≤68 dB @ 1 metre						
Protection Degree	IP20 (other on request)													
Management Software	Included													
Dimensions (mm) WxDxH	400 x 815 x 1040			515 x 855 x 1440			880 x 775 x 1900			1250 x 1055 x 1900	1245 x 775 x 1900		1250 x 840 x 2040 (+transformer cabinet)	
Net Weight (kg)	187	244	270	393	457	536	539	595	647	910.5	1150	1283	1497	2800
Comms. Adaptors	SNMP, MODBUS, RS485, Remote Panel, Bacnet													

\*Depending on power and input/output conditions

## PowerPro EF LIFT Series

### UPS SELECTION

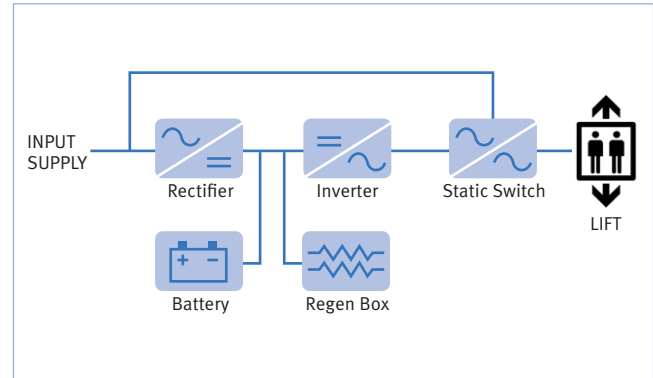
With lift systems for evacuation needing to meet BS 9999 Annex G, the selection of a fully working secondary power source is essential. UPS Systems are a cost effective choice as a secondary source for lifts, providing easy installation and integration. However Lift systems producing regenerative power during their standard operation will cause internal damage to standard UPS. The PowerPro EF LIFT has been purposely designed for this, providing a solution to Lifts producing a regenerative feedback.



### REGENERATIVE LOAD OPERATION

The EF LIFT UPS incorporates an intelligent braking system, using IGBT controllers to electronically absorb any regenerative back feed energy from the lift. Regenerative load causes reverse current to flow to the output of the UPS system. This reverse energy causes the internal DC bus within the UPS to rise above safe levels of the UPS design and can cause damage to the DC Capacitors, Rectifier and Inverter.

The PowerPro EF Lift system has a separate IGBT Controlled Regeneration Box that connects directly to the UPS DC Bus. The DC bus voltage of the UPS typically floats at  $\pm 405\text{Vdc}$  and can boost up to  $435\text{Vdc}$ . The Regen Box monitoring system continuously analyses the internal rise of the DC bus voltage. When the voltage increases over  $435\text{Vdc}$  fast switching IGBTs connect DC resistors and dissipate the energy into heat, protecting the UPS components and Inverter operation. When the DC bus voltage decreases back down to an acceptable level, the Regen Box self deactivates.



### REGENERATIVE LOAD BOX SPECIFICATIONS

MODEL	RG2.7	RG4.5	RG5.8	RG9	RG11.8	RG18	RG23
Regenerative Load Max Feedback (kW)	2.7	4.5	5.8	9	11.8	18	23
Switching Type	IGBT						
Cooling	Forced Fan Bottom to Top						
Colour	Galvanised Metal						
Dimensions (mm) WxDxH	320 x 650 x 780				460 x 810 x 900		



# PowerTower™ Green CMS Series

## Online Double Conversion Modular UPS

### 15kVA – 1200kVA



» Modular Design » Scalable » Pay as you grow



**BPC Energy have introduced new 15kVA, 25kVA, 50kVA and 75kVA modules to provide even better vertical and horizontal scalability offering end users and data centre management power protection capacity from 15kVA up to 1200kVA in single newly-developed dedicated cabinets and parallel options up to 4.8MVA.**

BPC Energy have the widest choice of selected capacity modular options in the UPS industry and design specifically for data centres, computer systems and critical applications.

PowerTower Green CMS Range is capable of achieving exceptional efficiency of >96.5% in online double conversion mode, it also includes advanced technology that boosts efficiency to above 96% at lower loads such as only 30% to 50% without affecting the online protection.

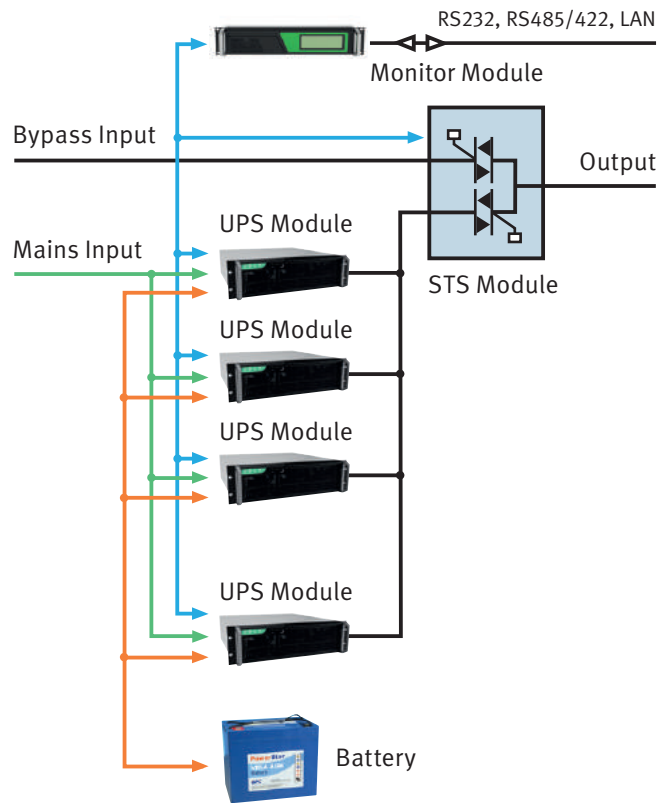
Where sites have stable mains supply and, at times, the critical loads are inactive, it would be possible to

consider the ECO economy mode where efficiency of 99% can be achieved. However, note that there is a fractional break in power while the UPS switches back to the inverter.

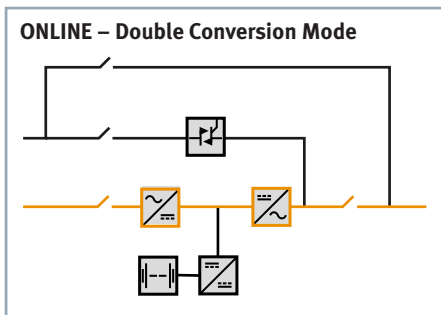
Unique to the PowerTower Green PTG25UM/PTG50UM & PTG75UM modules are the new “SMART Energy” option which is the introduction of the “Ultra Saving Line Mode” which can achieve efficiency up to 98.8% still meeting the IEC62040 power supply quality to the load. In addition to the backup function the modules can be used to save operating costs during peak loading.

- » **Financial Data Centre**
- » **Internet Data Centre**
- » **Disaster Recovery Data Centre**
- » **Telecom Central Systems**
- » **Government Authorities**

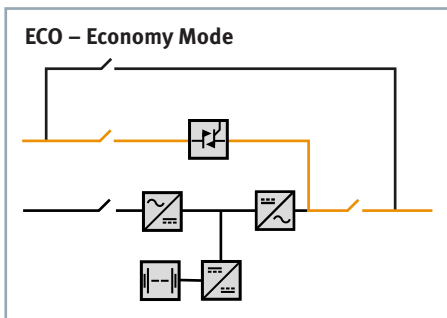
## POWERTOWER GREEN MODULAR CONCEPT



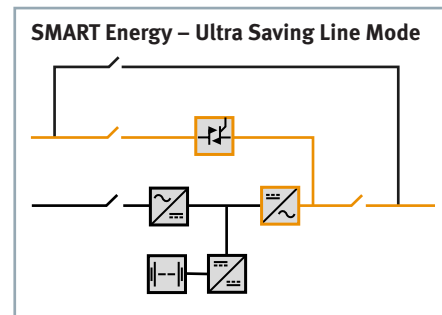
## MODES OF ADVANCED OPERATION



- UPS output PF=1, THDi <math>\leq 3\%</math>
- Efficiency more than 96.5%
- Mains battery seamless switching
- Meet the uninterrupted power supply and power quality of the load



- UPS is running in static bypass state
- Efficiency up to 99%
- Mains battery switching time is about 10 ms

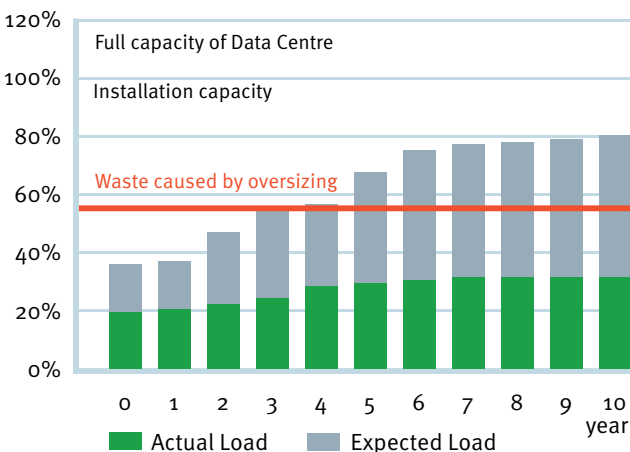


- Ultra high efficiency up to 98.8%
- Output quality regulation to load is of the highest standard available
- Mains power supply and battery power supply seamless switching
- Provide reactive power compensation and harmonic suppression to eliminate load interference back to the power grid
- Intelligent power test mode for testing UPS in the field without the need for renting load bank cabinet
- Battery and mains supply can be powered simultaneously to support high inrush and machinery start-up overloads
- In addition to the UPS function, this can be used as a Smart Storage device to avoid peak load electricity penalties during high tariff periods, thus saving considerable operating costs

## PowerTower Green CMS Features

### OPTIMISE CAPITAL INVESTMENT

The BPC PowerTower can be scaled in vertical modular steps up to 1200kVA of power in a single frame, providing a cost effective method of building any data centre without oversizing that can result in energy waste. Flexibility and cost effective 'right sizing' of any UPS system must be priority when increasing or decreasing power to meet future requirements.



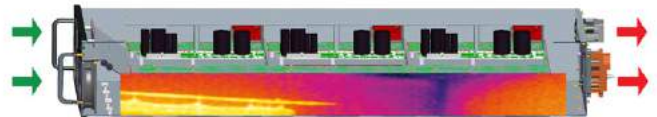
Oversizing Results in Energy Waste

### EXCELLENT POWER PERFORMANCE

The PowerTower UPS has a near unity input power factor at full load, reducing the size of the input cables/fuses. Low total input harmonic distortion (THDi <3%) reduces load pollution, increases power quality and optimises generator sizing. Overall this excellent power performance directly translates into significant reduction in installation costs and extends the life of valuable equipment.

### DYNAMIC AIR FLOW AND DUST FILTERS

The PowerTower Green dynamic air flow technology takes cool air from the front of each module. Simply directing the heat dissipated from the active power electronics and exhausting the higher core temperature out the back.



Incorporating dust filters into each cabinet for optimum cooler and cleaner design resulting in longer component design life and increasing periods between maintenance visits. Available as standard on 25kVA, 50kVA & 75kVA modular cabinets.

### SMALL FOOTPRINT

The PowerTower Green can deliver one of the smallest surface areas; less than 500kW/m<sup>2</sup> and requires minimal clearance around the unit so floor space required in data centres for UPS can be kept to an absolute minimum.

### TRUE 'HOT SWAP' CAPABILITY

The BPC PowerTower modular UPS operates a true hot swap technology where each power module is automatically synchronised to the load sharing of the system. There is no need to identify individual power modules or sequence them in any particular order. The monitoring module is also designed to be hot swappable, making system maintenance easy. Simply insert the power and monitor modules into the slots and engage. The process of replacement or vertical scalability is easily achieved, and hot swapping means no downtime and the service/ operating personnel do not require special skills.



Easy hot swappable design modules



## EASY INSTALLATION & OPERATION

The PowerTower offers a flexible install so assembly time is greatly reduced. Bottom and top entry with generous cable management will simplify the more difficult installation. BPC's PowerTower Green UPS is very easy to maintain and control, providing the highest reliability and best protection for supplying power.

Options are available for Galvanic Isolation Transformer cabinet, improved battery management, frequency conversion, conformal coating, input & output switchgear.

## LOW MTTR AND 99.9999% AVAILABILITY

The 'hot swap' modularity design of the PowerTower Green provides a high mean time between failure (MTBF), allowing the user to replace and add modules without the risk of downtime, ultimately reducing mean time to repair (MTTR). Whereas a standalone unit takes typically 6 hours to repair, the PowerTower modular UPS can be reduced to less than 30 minutes, giving 'six nines' power availability.

## HIGH LOAD ADAPTABILITY (BLADE FRIENDLY)

All PowerTower Green Modular UPS systems are provided with an output power factor of 0.9 & 1.0, providing fully rated output active power without derating in the range of 0.7 lagging to 0.8 loading in compliance with modern IT equipment.

## SINGLE FRAME CONCEPTS

BPC offers more single frame solutions than any other manufacturer, with 12, 24, 36, 30, 60, 120, 150, 200, 250, 300, 400, 450, 500, 600, 900 & 1200kVA chassis, reducing the need to parallel cabinets and improving the reliability of installations.

## FLEXIBLE MODULAR AND SCALABLE DESIGN

With the ever increasing demands of power, the PowerTower Green UPS allows you to increase your power capacity in small steps reducing initial costs and over sizing. This flexibility can extend both vertically and horizontally so as your business grows, the PowerTower Green UPS grows with you.

Vertical Scalability  
by adding power modules up to 1200kVA

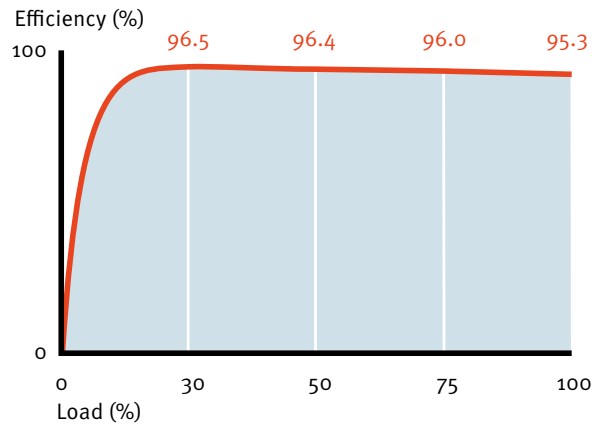


### Horizontal Scalability

possible with up to 4 frames in parallel, achieving total power capacity of 4.8MVA

## HIGH EFFICIENCY

The PowerTower Green offers true online efficiency over 96.5% even at 30% load, significantly reducing system running costs and site air conditioning expenses, thus helping to reduce the organisation's carbon footprint.



Taking a small to medium data centre 200kVA/180kW load and air conditioned with coefficient performance of 3:1

- Save 127,144KWh per year compared to traditional UPS (90% efficiency)
- Save 210,240KWh per year compared to legacy UPS (86% efficiency)

In DC/AC inverter mode, when the power supply is not present, the battery efficiency is over 95% reducing actual battery capacity requirement and improving design life.

## TOTAL COST OF OWNERSHIP (TCO)

The PowerTower Green UPS offers today's data centre management the opportunity for sustainability and future growth. With flexibility and scalability combined with lower cost of service contracts, short and long term, it can increase savings on overall operations.



# PowerTower™ Green RITo6 Series

## Rack Independent Online Double Conversion UPS

### 6kVA – 36kVA



The PowerTower Green RITo6 series is a rack independent modular UPS of low and medium power developed by BPC. With a flexible structure, it can be embedded into any standard 19 inch cabinet and can be configured to operate in any power requirement.

Ranging from 6-36kVA using 6kVA modules in a functional rack independent solution, the PowerTower Green RITo6 series is ideal for the space conscious enterprise networking manager.

#### PTG RIT 12/6

12kVA – 2 module rack 19" (w) x 600mm (d) x 3U (h)



#### PTG RIT 24/6

24kVA – 4 module rack 19" (w) x 600mm (d) x 5U (h)



#### PTG RIT 36/6

36kVA – 6 module rack 19" (w) x 600mm (d) x 7U (h)



- N+X module-level redundancy UPS System
- 1/1, 3/1, 1/3 and 3/3 configuration via display
- Multi-level decentralized control technology and Master-slave synchronization in sequence control eliminating system failure bottleneck
- Each module equally shares the input and output current automatically, and all UPS modules share the batteries
- Battery discharge management, auto-transfer between floating and equal charging, temperature compensation
- Multiple User options RS232, RS485, dry contacts, TCP/IP Adapter for local and remote communication
- Optional input/output transformer

#### RIT Monitoring Module

Display, Monitoring, Communication and Alarm Management



#### PTG6M Power Module

Rectifier, Inverter, Battery Charger, Control



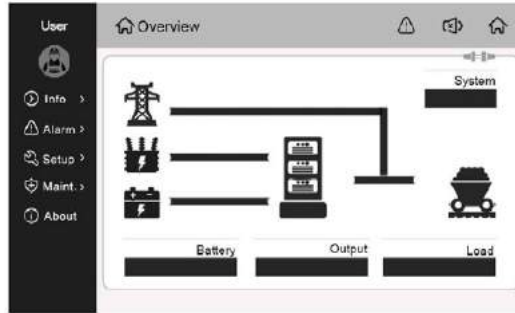
## PowerTower Green RITo6 Technical Specification

MODEL	PTGRIT 12/6	PTGRIT 24/6	PTGRIT 36/6
Maximum Power kVA	12kVA	24kVA	36kVA
Compatible Power Module	PTG6M		
<b>INPUT</b>			
Nominal Voltage	(1PH + N + E) 380V/220V ±25%		(1PH + N + E) or (3PH + N + E) 380V/220V ±25%, 400V/230V ±25%, 415V/240V ±25%
Frequency Range	50Hz ±10%, 60Hz ±10%		
Power Factor	≥0.99		
<b>OUTPUT</b>			
Nominal Voltage	(1PH + N + E) 220, 230, 240Vac		(1PH + N + E) or (3PH + N + E) 380/220Vac 400/230Vac 415/240Vac
AC Voltage Regulation	±1%		
Power Factor	0.9		
Crest Factor	3:1		
Harmonic Distortion (Linear Load)	≤1%		
Transfer Time	Zero		
<b>EFFICIENCY</b>			
ONLINE Mode	≥95%		
Battery Mode	≥98%		
<b>BATTERY</b>			
Rated DC Input Voltage	±240Vdc		
Charging Ability	Within 10 hours (2 hours backup)		
<b>GENERAL</b>			
Display	LCD/LED Screen		
Communication	RS232, RS485, 2 dry contact, TCP/IP adaptor		
Ambient Temperature	-25°C ~ 60°C		
Operating Temperature	-5°C ~ 40°C		
Operating Humidity	≤95% (non-condensed)		
Dimensions (mm) WxDxH	480 x 600 x 133 (3U)	480 x 600 x 222 (5U)	480 x 600 x 311 (7U)
Net Weight (kgs)	12	16	20
<b>MODEL - POWER MODULE</b>			
<b>PTG6M</b>			
Capacity kVA/kW	6/5.4		
Input/Output Mode	1/1, 3/1, 1/3, 3/3 (Ph + N + E)		
Input PF	≥0.99		
THDI	≥3%		
Overload Ability	125% for 10 min, 150% for 1 min		
Max. Charging Power	3 A		
Max. Heat Dissipation	338W		
Dimensions (mm) WxDxH	219 x 487 x 83		
Net Weight (kgs)	7.5		

## PowerTower Green CMS Features

### STS MODULE

- Transfer time < 1ms
- Overload ability
- Self-diagnostics, interlock and protection functions



### MONITOR MODULE

- Dual core 16-bit processor
- Easy to read 240 x 64 LCD touch controller
- Display of general, system, battery and module information, system output, event record and index set up
- RSS232 and RS485 communication
- Output dry contacts
- TCP/IP, SNMP (optional)

### POWER MODULES

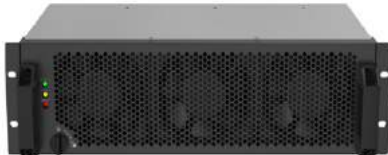
PTG15UM – 15kVA/15kW Power Module



PTG25UM – 25kVA/25kW Power Module



PTG50UM – 50kVA/50kW Power Module



PTG75UM – 75kVA /75kW Power Module



*\*Image may differ from product*



### CABINET OPTIONS

Additional space for cable management



Input and output switch breakers can be included

- Online double conversion technology ensures reliable power supply
- High efficiency reduces power and cooling costs
- Each UPS module is a fully functional UPS including a converter, inverter, charger and controller
- Intelligent communication ports
- Dust filter module design for the 25kVA / 50kVA / 75kVA options



# PowerTower™ Green CMS15 Range

## Three Phase Online Double Conversion UPS

### 15kVA – 120kVA

VFI



#### PTGCMS 30/15U

- Max capacity of system: 30kVA
- Power module model: PTG15UM
- Power module capacity: 15kVA
- 2 module slots

The CMS 15 Range also has a flexible rack independent structure which can be fitted into any 1000mm deep 19" cabinet or specialised high IP enclosure.



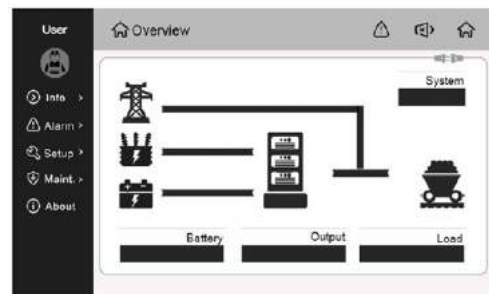
#### PTGCMS 60/15U

- Max capacity of system: 60kVA
- Power module model: PTG15UM
- Power module capacity: 15kVA
- 4 module slots



#### PTGCMS 120/15U

- Max capacity of system: 120kVA
- Power module model: PTG15UM
- Power module capacity: 15kVA
- 8 module slots



Colour 7 inch touch screen LCD display panel providing all UPS control parameters, status and alarm information.

*\*Image may differ from product*



## PowerTower Green CMS15

### Technical Specification

MODEL - CABINET		PTGCMS 30/15U	PTGCMS 60/15U	PTGCMS 120/15U
Power Rating kVA/KW		30	60	120
Compatible Power Module		PTG15UM		
<b>INPUT</b>				
Nominal Voltage		380V / 220V, 400V / 230V, 415V / 240V (1Ph + N + E, 3Ph + N + E)		
Voltage Range		176 - 276 @ full load : 132 - 276 @ half load		
Frequency Range		50 Hz or 60 Hz		
Power Factor		≥0.99		
<b>OUTPUT</b>				
Nominal Voltage		380 Vac / 220 Vac, 400 Vac / 230 Vac, 415 Vac / 240 Vac (1Ph + N + E, 3Ph + N + E)		
AC Voltage Regulation (Battery Mode)		±1%		
Power Factor		1.0 Unity		
Crest Factor		3:1		
Harmonic Distortion (Linear Load)		THD <3%		
Transfer Time		Zero		
Waveform		Sinewave		
<b>EFFICIENCY</b>				
ONLINE Mode		>96%		
ECO Mode		>99%		
Battery Mode		>98%		
<b>BATTERY</b>				
Battery Type		VRLA Sealed Lead Acid/ Gel/ Lithium/ Nickle Cadmium Maintenance Free Batteries		
Rated DC Voltage		Nominal ±240Vdc (rated 40 blocks x 12Vdc: settable from 32 - 44 blocks)		
Charging Ability		10 hours (2 hours back up)		
Charging Voltage Stability		±1%		
<b>GENERAL</b>				
Display		Touch LCD/LED Screen		
Communication		RS232, RS485, 8 dry contacts, TCP/IP adaptor, SNMP (optional)		
Operating Temperature		0 - 40°C		
Operating Humidity		0 - 90% (non-condensed)		
Acoustic Noise		70 dB @ 1 metre		
Protection Degree		IP20		
Cabinet (single)	Dimensions (mm) WxDxH	442 x 800 x 662	442 x 800 x 840	442 x 800 x 1195
	Weight (kgs)	82	92	118
<b>MODEL - POWER MODULE</b>		<b>PTG15UM</b>		
Capacity kVA/kW		15kVA/15kW		
Input/Output Mode		3/3 (Ph + N + E)		
Input Power Factor		≥0.99		
THDI		≥3%		
Overload Ability		110% for 60 mins, 125% for 10 mins, 150% for 1 sec		
Max. Charging Power		3A		
Max. Heat Dissipation		590W		
Dimensions (mm) WxDxH		380 x 590 x 88		
Net Weight (kgs)		16		

# PowerTower™ Green CMS25 Range

## Three Phase Online Double Conversion UPS

### 25kVA – 250kVA



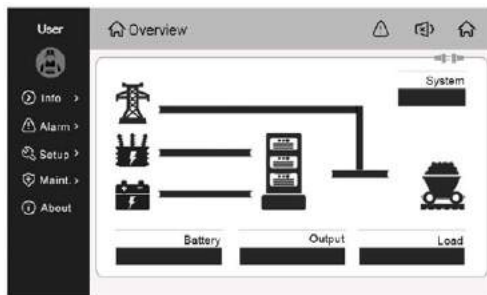
#### PTGCMS 150/25U

- Max capacity of system: 150kVA
- Power module model: PTG25UM
- Power module capacity: 25kVA
- 6 module slots



#### PTGCMS 250/25U

- Max capacity of system: 250kVA
- Power module model: PTG25UM
- Power module capacity: 25kVA
- 10 module slots



Colour 7 inch touch screen LCD display panel providing all UPS control parameters, status and alarm information

*\*Image may differ from product*

## PowerTower Green CMS25

### Technical Specification

MODEL - CABINET		PTGCMS 150/25U	PTGCMS 250/25U
Power Rating kVA/KW		150/150	250/250
Compatible Power Module		PTG25UM	
<b>INPUT</b>			
Nominal Voltage		380 V / 220 V, 400 V / 230 V, 415 V / 240 V (1Ph + N + E, 3Ph + N + E)	
Voltage Range		176 - 276 @ full load : 132 - 276 @ half load	
Frequency Range		50 Hz or 60 Hz	
Power Factor		≥0.99	
<b>OUTPUT</b>			
Nominal Voltage		380 Vac / 220 Vac, 400 Vac / 230 Vac, 415 Vac / 240 Vac (1Ph + N + E, 3Ph + N + E)	
AC Voltage Regulation (Battery Mode)		±1%	
Power Factor		1.0 Unity	
Crest Factor		3:1	
Harmonic Distortion (Linear Load)		THD ≤3%	
Transfer Time		Zero	
Waveform		Sinewave	
<b>EFFICIENCY</b>			
ONLINE Mode		≥96%	
ECO Mode		99%	
Battery Mode		≥95%	
<b>BATTERY</b>			
Battery Type		VRLA Sealed Lead Acid / Gel / Lithium / Nickel Cadmium Maintenance Free Batteries	
Rated DC Input Voltage		Nominal ±240Vdc (rated 40 blocks x 12Vdc: settable from 32 - 44 blocks)	
Charging Ability		10 hours (2 hours back up)	
Charging Voltage Stability		±1%	
<b>GENERAL</b>			
Display		Touch LCD/LED Screen	
Communication		RS232, RS485, 8 Dry Contacts, TCP/IP Adaptor, SNMP (Optional)	
Operating Temperature		0 - 40°C	
Operating Humidity		0 - 90% (non-condensed)	
Acoustic Noise		70 dB @ 1 metre	
Protection Degree		IP20	
Cabinet (single)	Dimensions (mm) WxDxH	600 x 1000 x 1600	600 x 1000 x 2000
	Net Weight (kgs)	210	260
<b>MODEL - POWER MODULE</b>		<b>PTG25UM</b>	
Capacity kVA/kW		25/25	
Input / Output Mode		3/3, (Ph + N + E)	
Input Power Factor		±0.99	
THDI		≥3%	
Overload Ability		110% for 60 mins, 125% for 10 mins, 150% for 1 sec	
Max. Charging Power		5A	
Max. Heat Dissipation		900W	
Dimensions (mm) WxDxH		442 x 590 x 88	
Weight (kgs)		19	

# PowerTower™ Green CMS50 Range

## Three Phase Online Double Conversion UPS

### 200kVA – 500kVA



#### PTGCMS 200/50U

- Max capacity of system: 200kVA
- Power module model: PTG50UM
- Power module capacity: 50kVA
- 4 module slots



#### PTGCMS 300/50U

- Max capacity of system: 300kVA
- Power module model: PTG50UM
- Power module capacity: 50kVA
- 6 module slots



#### PTGCMS 400/50U

- Max capacity of system: 400kVA
- Power module model: PTG50UM
- Power module capacity: 50kVA
- 8 module slots



#### PTGCMS 500/50U

- Max capacity of system: 500kVA
- Power module model: PTG50UM
- Power module capacity: 50kVA
- 10 module slots

\*Image may differ from product



# PowerTower Green CMS50

## Technical Specification

MODEL - CABINET		PTGCMS 200/50U	PTGCMS 300/50U	PTGCMS 400/50U	PTGCMS 500/50U
Power Rating kVA/KW		200	300	400	500
Compatible Power Module		PTG50UM			
<b>INPUT</b>					
Nominal Voltage		380V/220VAC, 400V/230VAC, 415V/240VAC			
Voltage Range		132-276 VAC, (If 132-176VAC, 50% load max.)			
Frequency Range		40-70Hz			
Power Factor		≥0.99			
<b>OUTPUT</b>					
Nominal Voltage		380V/220VAC, 400V/230VAC, 415V/240VAC			
AC Voltage Regulation (Battery Mode)		±1%			
Power Factor		1.0 Unity			
Crest Factor		3:1			
Harmonic Distortion (Linear Load)		≤2%			
Transfer Time		Zero			
Waveform		Sinewave			
<b>EFFICIENCY</b>					
ONLINE Mode		96.5%			
ECO Mode		99%			
Battery Mode		≥95%			
<b>BATTERY</b>					
Battery Type		VRLA Sealed Lead Acid / Gel / Lithium / Nickel Cadmium Maintenance Free Batteries			
Rated DC Input Voltage		Nominal ±240Vdc (rated 40 blocks x 12Vdc: settable from 32 - 44 blocks)			
Charging Ability		10 hours (2 hours back up)			
Charging Voltage Stability		±1%			
<b>GENERAL</b>					
Display		Touch LCD/LED Screen			
Communication		RS232, RS485, 8 Dry Contacts, TCP/IP Adaptor, SNMP (Optional)			
Operating Temperature		-5°C - 40°C			
Operating Humidity		≤95%, (non-condensed)			
Acoustic Noise		≤70 dB @ 1 metre			
Protection Degree		IP20			
Cabinet (single)	Dimensions (mm) WxDxH	600 x 1000 x 1600	900 x 1000 x 1200	900 x 1000 x 2000	1200 x 1000 x 2000
	Net Weight (kgs)	220	300	340	380
<b>MODEL - POWER MODULE</b>		<b>PTG50UM</b>			
Capacity kVA/kW		50/50			
Input / Output Mode		3/3, (Ph + N + E)			
Input Power Factor		≤0.99			
THDI		≤3%			
Overload Ability		110% for 60 mins, 125% for 10 mins, 150% for 1 sec			
Max. Charging Power		10A			
Max. Heat Dissipation		1500W			
Dimensions (mm) WxDxH		482 x 622 x 129			
Weight (kgs)		30			

# PowerTower™ Green CMS75 Range

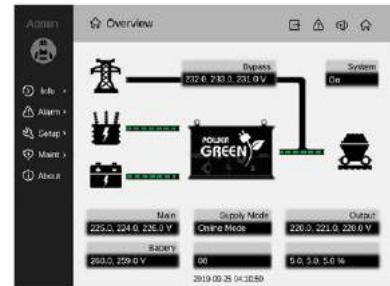
## Three Phase Online Double Conversion UPS

75kVA – 1200kVA



### PTGCMS 450/75U

- Max capacity of system: 450kVA
- Power module model: PTG75UM
- Power module capacity: 75kVA
- 6 module slots



Colour 10 inch touch screen LCD display panel providing all UPS control parameters, status and alarm information

### PTGCMS 600/75U

- Max capacity of system: 600kVA
- Power module model: PTG75UM
- Power module capacity: 75kVA
- 8 module slots



### PTGCMS 900/75U and 1200/75U

- Max capacity of system: 900kVA and 1200kVA
- Power module model: PTG75UM
- Power module capacity: 75kVA
- 12 and 16 module slots

# PowerTower Green CMS75

## Technical Specification

MODEL - CABINET	PTGCMS 450/75U	PTGCMS 600/75U	PTGCMS 900/75U	PTGCMS 1200/75U	
Power Rating kVA/KW	450/450	600/600	900/900	1200/1200	
Compatible Power Module	PTG75UM				
<b>INPUT</b>					
Nominal Voltage	380 V / 220 V, 400 V / 230 V, 415 V / 240 V (1Ph + N + E, 3Ph + N + E)				
Voltage Range	176 - 276 @ full load : 132 - 276 @ half load				
Frequency Range	50 Hz or 60 Hz				
Power Factor	≥0.99				
<b>OUTPUT</b>					
Nominal Voltage	380 Vac / 220 Vac, 400 Vac / 230 Vac, 415 Vac / 240 Vac (1Ph + N + E, 3Ph + N + E)				
AC Voltage Regulation (Battery Mode)	±1%				
Power Factor	1.0 Unity				
Crest Factor	3:1				
Harmonic Distortion (Linear Load)	THD ≤3%				
Transfer Time	Zero				
Waveform	Sinewave				
<b>EFFICIENCY</b>					
ONLINE Mode	≥96.5%				
ECO Mode	≥99%				
SMART Energy Mode	≥98.5%				
Battery Mode	≥95%				
<b>BATTERY</b>					
Battery Type	VRLA Sealed Lead Acid / Gel / Lithium / Nickel Cadmium Maintenance Free Batteries				
Rated DC Input Voltage	Nominal ±240Vdc (rated 40 blocks x 12Vdc: settable from 32 - 44 blocks)				
Charging Ability	10 hours (2 hours back up)				
Charging Voltage Stability	±1%				
<b>GENERAL</b>					
Display	Touch LCD/LED Screen				
Communication	RS232, RS485, 8 Dry Contacts, TCP/IP Adaptor, SNMP (Optional)				
Operating Temperature	0 ~ 40°C				
Operating Humidity	0-90% (non-condensed)				
Acoustic Noise	70dB @ 1 metre				
Protection Degree	IP20				
Cabinet (single)	Dimensions (mm) WxDxH	900 x 1000 x 2000	1200 x 1000 x 2000	1800 x 1000 x 2000	2000 x 1000 x 2200
	Net Weight (kgs)	364	413	658	700
<b>MODEL - POWER MODULE</b>		<b>PTG75UM</b>			
Capacity kVA/kW	75/75				
Input / Output Mode	3/3, (Ph + N + E)				
Input Power Factor	±0.99				
THDI	≥3%				
Overload Ability	110% for 60 mins, 125% for 10 mins, 150% for 1 sec				
Max. Charging Power	15A				
Max. Heat Dissipation	2900W				
Dimensions (mm) WxDxH	482 x 628 x 176				
Weight (kgs)	45				

# Hot Swappable Modular Battery Solutions

The BPC Rack Independent Battery System is a hot swappable battery containment solution.

Designed to work with the PowerTower Modular solutions the battery system provides the complete modular package. The system can be installed into any 19" rack that is 1000mm deep and suitable for the weight of the battery.

Rack Independent UPS solutions can also be integrated with modular battery solutions. Typically suitable for applications for 200kVA for 10 minutes autonomy or combinations of more autonomy but less power capacity.

\*Monitoring is completed by the Uninterruptible Power Supply (UPS) only.

## BATTERY RACK INDEPENDENT FRAME



Single Tray

Frame

MODEL	BCR40N
Battery Type	VRLA Sealed Lead Acid Battery
Included Battery Trays	4 trays x 10 blocks each
Total number of Battery Blocks	40
Battery Voltage	± 240VDC
Battery Mounting	19" Battery Tray
Expected Battery Life	5 years
Battery Volt-Amp-Hour Capacity	4320
Maximum (HxWxD) per Frame	4U x 19" x 865mm
Cabinet Height	42U (max. 8 frames)
Cabinet Dimensions (mm) (Can vary depending on requirement)	2000 (h) x 600 (w) x 1000 (d)
Net Weight (with batts.)	105kgs
Colour	black
Approvals	CE, EN/IEC 62040-1-1, EN/IEC 62040-2, EN/IEC 62040-3, Eurobat General Purpose, UL 1778



\*Product may differ from image



\*Product may differ from image



## High Discharge C-Rating Range Lithium-ion Battery Energy Storage System



*\*Images may differ from the final product*

The rated voltage of the systems is  $\pm 240$  volts with optional rated capacities of 40, 80 and 120AH. Manufactured with safety as the primary objective the high discharge range LiFePO<sub>4</sub> (Lithium Iron Phosphate) batteries achieve both well defined performance and long term stability. The core of each system is a high power density 48 volt module which consists of prismatic LiFePO<sub>4</sub> cells configured using a fully automated robotic production technic delivering a high quality product.

The system cabinet consists of 10 modules and a touch screen display control module which monitors the running status of the battery system in real time. Providing information on the operating status, capacity, voltage of each cell for equalisation status and details of charge / discharge performance.

Combined with an advanced three level architecture BMS design control system ensures adaptive equalisation for each cell maximising energy storage and discharge / charge performance while protecting the safety of the battery system at all times.



- » Significant capacity density
- » High performance discharge and recharge
- » Modular design, easy to expand, convenient maintenance
- » Multiple systems can be used in parallel
- » Proven safety and quality
- » Expected design life of 15-20 years
- » High number of cycles over 4,500
- » Wide temperature range

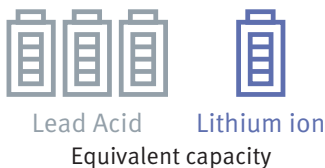
## High Discharge C-Rating Range

### Technical Specification

BATTERY MODULE SPECIFICATIONS			
Module Code	1Px15S40	2Px15S40	3Px15S40
Cell	3.2V 40Ah		
Combination	15S1P	15S2P	15S3P
Configuration	15 cells	30 cells	45 cells
Rated Energy @ 25°C, kWh	1.92kWh	3.84kWh	5.76kWh
Maximum Discharge Power kW	9.6kW (5C) (optional 11.52kW @ 6C)	19.2kW (5C)	23.04kW (4)
Terminal Output	Connectors		
Dimensions (mm) WxDxH	424 x 445 x 177	424 x 610 x 177	424 x 850 x 177
Net Weight (kgs)	25	45	60
CABINET SYSTEM SPECIFICATIONS			
Cabinet Model Number	PTG480vLFP40/19.2/5C Optional PTG480vLFP40/19.2/6C	PTG480vLFP80/38.4/5C	PTG480vLFP120/57.6/4C
Configuration	10 battery modules ( model code as above) + 1 control module		
Rated Charge Rate @ 25°C	2C		
Max. Discharge Rate 25°C	5C (optional 6C)	5C	4C
Max. Capacity	40Ah	80Ah	120Ah
Rated Energy	19.2kWh	38.4kWh	57.6kWh
Maximum Continuous Discharge (kW)	96kW (5C) optional 115.2kW (6C)	192kW (5C)	230.4kW (4C)
Rated Voltage	±240VDC		
Working Voltage	±188 - ±274VDC		
Communication	CAN		
BMS	Adaptive BMS		
Dimensions (mm) WxDxH	1000 x 550 x 1200	1000 x 760 x 1200	1000 x 1000 x 1200
Net Weight (kgs)	335	555	725

### Lead-Acid Batteries vs Lithium Ion Batteries

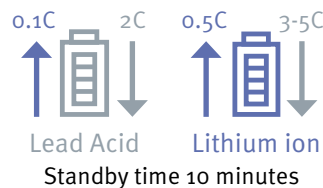
- Less weight
- Less space
- No structure
- Reinforcement required



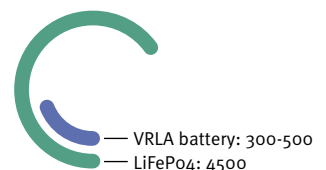
- Longer Life
- Convenient maintenance
- No oversizing required



- Higher Charge Rate
- Shorter backup time
- Less battery capacity needed



- Higher cycle life when compared to Lead acid batteries



# PowerPro™ EL Ranges

## Single & Three Phase Options

### EL100XA / ELMOD / EL300DSP / CBU

» EN50171

» Lighting

» Reliable



**The PowerPro EL ranges are Static Inverter Systems designed specifically for emergency lighting applications according to European BS EN50171, EN50272-2, BS 5266 and ICEL 1009.**

A highly versatile range, not only providing capacity up to 300kVA but also a comprehensive bespoke range of AC/DC Central Battery Units with nominally 24V, 48V, and 110V options, allowing BPC to provide an all-inclusive selection of reliable and cost effective products to meet the most challenging of lighting applications.

BPC PowerPro EL300DSP Emergency Lighting Inverter range available from 500VA to 300kVA with BSI Kitemark is now approved with UAE Civil Defence. BSI Kitemark, provides assurance that samples are regularly subjected to rigorous, independent testing to ensure that they comply with stringent standards for quality, safety, product performance and reliability. The Kitemark is therefore BPC's commitment towards maintaining the highest possible standards.



KM 658954  
BS EN 50171



## PowerPro EL Range & Features

### EL100XA Series – 1/1

A compact series of single phase input & output Static Inverters ranging from 500VA to 3kVA.



### EL100XA Features

- True sinewave & PWM microprocessor controlled technology
- System and battery test function
- DC short circuit protection
- Recharges batteries up to 80% within 12 hours
- Fast changeover to Battery Mode
- Built-in distribution panel (6x standard)
- LCD panel providing accurate, detailed information about load, batteries, system diagnostics and audible alarm
- RS232 and dry contacts for communication and remote monitoring
- Internal battery compartment
- Reduced MTTR (mean time to repair) due to modular design
- Deep Discharge Protection

### ELMOD Series – 1/1, 3/1

High performance single and three phase input and single phase output modular Static Inverter ranging from 4kVA to 24kVA.



### ELMOD Features

- 24kVA Power Cabinet, built up of 4kVA Power Modules
- 1/1 & 3/1 Configuration via display
- Hot-Swap Power Module
- True sinewave output
- Output configurable to 3 modes of operation (Changeover/ Inverter/Non-Maintained)
- No break Load Transfer for use with Discharge Lamps
- Deep Discharge Protection
- Reverse Battery Polarity Protection
- Front access for all maintenance and repair
- Each module automatically equally shares the input and output current, all inverter modules share the batteries
- Battery Short Circuit Protection
- Battery discharge management, auto-transfer between floating and equal charging, temperature compensation
- Multiple communication options RS232, RS485, dry contacts, TCP/IP Adapter for local and remote communication

### EL300DSP Series – 3/3

High performance three phase input & output Static Inverter ranging from 10kVA to 160kVA.



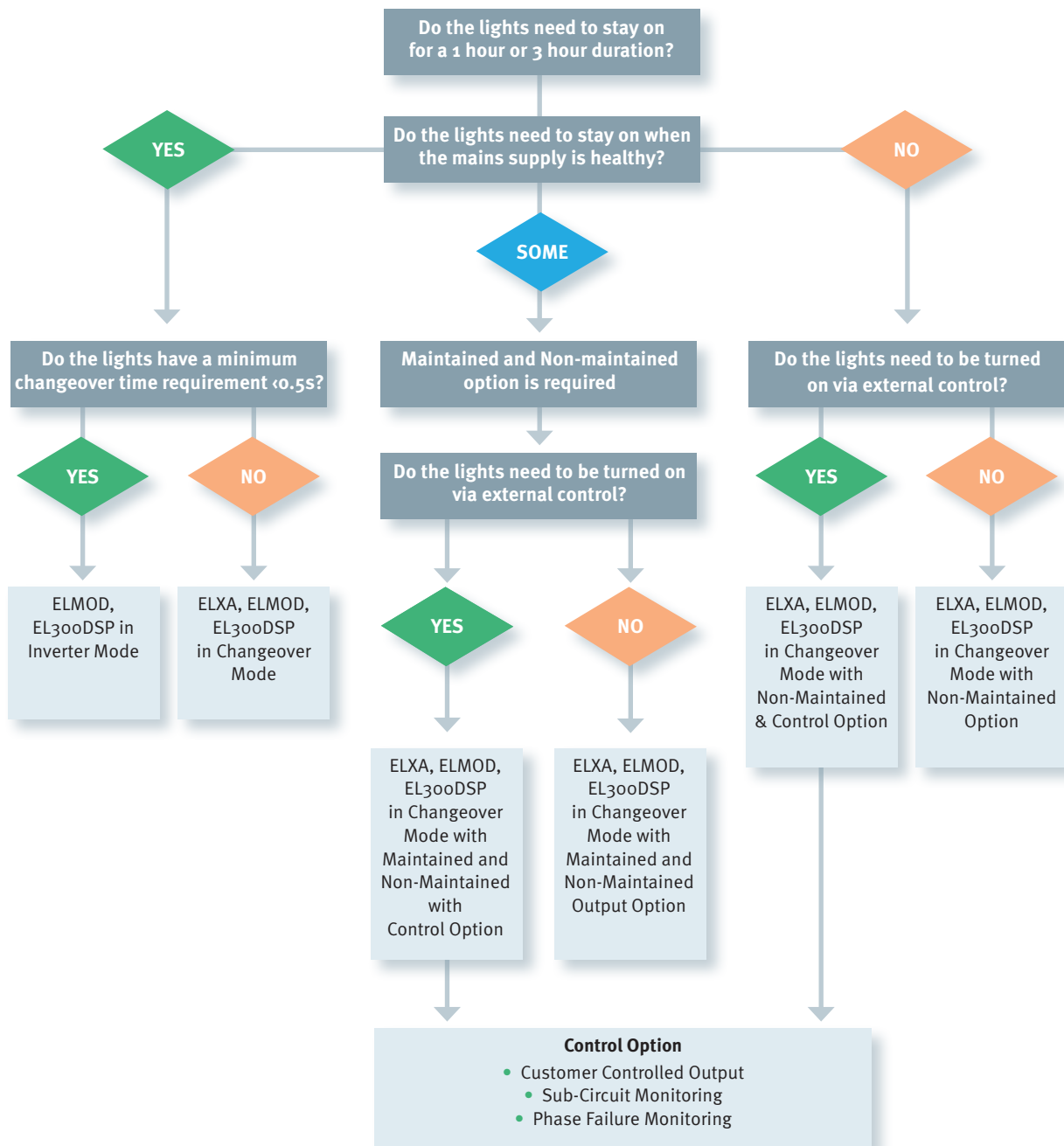
### EL100 / EL300DSP Features

- True sinewave & PWM microprocessor controlled technology
- DC short circuit protection
- Recharges batteries up to 80% within 12 hours
- FAR Controls including 48Vdc supply for Fire Alarm Panel
- Selectable Non-Maintained/Maintained Mode with external Control (if external contactor fitted)
- External Phase Fail Connection (if external Contactor fitted)
- External Test Facility included
- Unique inverter design to suit high inrush lighting loads
- User selectable Inverter or Changeover Mode
- LCD panel providing accurate detailed information about load, batteries and inverter with advanced diagnostics
- RS232 and dry contacts for communication and remote monitoring
- Deep Discharge Protection



## PowerPro EL Considerations

Choosing the right Static Inverter to support your Emergency Lighting System will depend on a number of pivotal factors; it is key to ensure the right system is provided for the right type of installation and this can depend on a variety of considerations. Below is a quick guide to understanding your requirements.

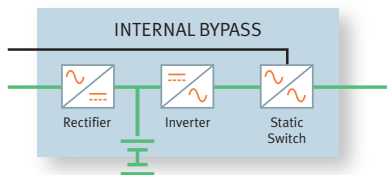


## PowerPro EL System Operation Descriptions

With multiple ways to control lights within an application, the below descriptions and drawings show the various ways the lighting load may be controlled.

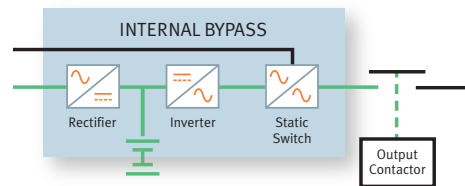
### MAINTAINED OUTPUT

Static Inverter provides continuous power to the emergency luminaires during normal operation and during power failure.



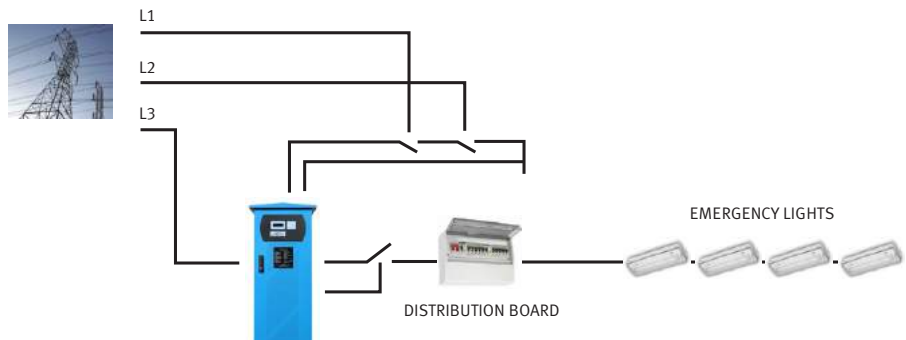
### NON-MAINTAINED OUTPUT

Static Inverter output and emergency luminaires are off during normal operation. During power failure the Static Inverter output is activated and the luminaires turn on.



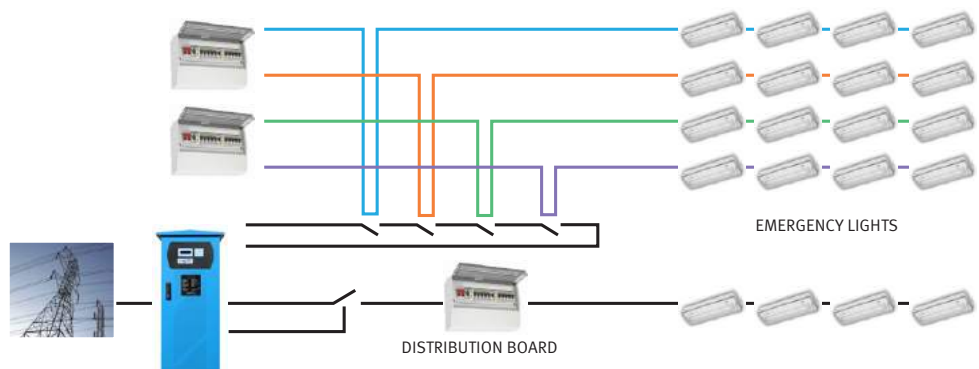
### PHASE FAILURE MONITORING

- During normal operation emergency lights non-maintained
- Emergency lights operate during mains failure
- Emergency lights operate if any other incoming phase fails



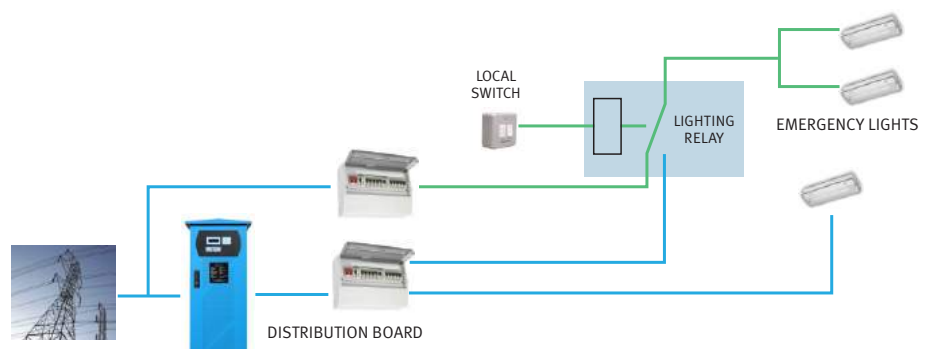
### SUB-CIRCUIT MONITORING

- During normal operation emergency lights non-maintained
- Emergency lights operate during mains failure
- Emergency lights operate if any sub-circuit breaker on non-emergency lighting trips



### CUSTOMER CONTROLLED OUTPUT

- During normal operation emergency lights switch maintained
- Emergency lights operate during mains failure
- Some lighting circuits left as maintained
- Emergency lights operate if local switch is OFF during mains failure



## PowerPro EL Range Options/Accessories



### High IP Cabinets

Ideally suited for sites that have harsh environments and additional protection of the unit is required.

The IP54 cabinet has been specifically designed to protect against dust limited ingress, as well as protection against water splashes from all directions making this the ideal solution.

### Bespoke Distribution and Controls Cabinets

Suited for sites that require built-in distribution.

The configuration of a building's lighting electrical installation can vary considerably. BPC can build the required distribution and controls into bespoke cabinets. The bespoke designs can aid in reducing site wiring and labour costs as well as providing a space-saving solution.



### Plinths

For sites that are using SWA cables, a plinth may be required to raise the unit off the floor and allow cables to be easily installed.



### Maintenance Bypass Panels

Bespoke Maintenance Bypass panel with additional distribution to suit customer requirements.



## PowerPro EL Range Options/Accessories

- **Remote Alarm Panel** – External panel for monitoring the Static Inverter
- **Output Distribution** – Internal distribution of the lighting circuits, standard in EL100XA & EL100, multiple outputs are optional
- **Maintenance Bypass Panel** – to provide flexibility during maintenance, service and/or repairs to the equipment. The bypass can ensure that the system is isolated from the critical load whilst work is carried out.
- **Phase Failure Monitoring** – Factory fitted relays to ensure that the system monitors all three phases. Failure of any phase activates the emergency lights
- **Sub-Circuit Monitoring** – Factory fitted relays monitor external lighting circuits, if any of the external circuits fail the emergency lights are activated
- **Lighting Control Interface** – Allows communication via a node/module to the testing and monitoring systems
- **Fire Alarm Monitoring** – An alarm condition from the fire alarm panel will activate the emergency lights
- **Night-Watchman Switch** – Enables switching of the emergency lights from a remote location, fail safe in an emergency condition
- **Light Switch Control Relay** – Enables individual circuits to be controlled externally, fail safe in an emergency condition
- **Timer Control** – Solar dials or 24hr timers can be used to activate the non-maintained contactor
- **Earth Fault Alarm** – Monitoring of battery positive and negative for earth leakage



15x Static Inverters and UPS Systems at the National Velodrome Stadium, Olympic Village







## PowerPro EL100 XA Single Phase Input & Output Static Inverter

### Technical Specification

MODEL	EL1005XA	EL1012XA	EL1030XA
Power Rating VA / Watts	500 / 400	1250 / 1000	3000 / 2400
<b>INPUT</b>			
Nominal Voltage	230 Vac (1Ph + N + PE)		
Voltage Range	140 - 310 VAC		
Frequency Range	47 - 55 Hz		
<b>OUTPUT</b>			
Nominal Voltage	230 Vac		
AC Voltage Regulation (Battery Mode)	±3%		
Frequency Range (Battery Mode)	±1%		
Power Factor	0.8		
Crest Factor	3:1		
Harmonic Distortion (Linear Load)	≤5%		
Transfer Time	0.5secs		
Waveform	Sinewave		
Load Circuits	6		
Overload	150% 1min / 120% Continuous		
Mode Operation	Changeover		
Maintained / Non-Maintained	Maintained (standard) / Non-Maintained (optional)		
<b>BATTERY</b>			
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries / Nickel Cadmium Batteries / Planté Batteries		
Internal / External	1 or 3 hour internal		
End of Life to En50171	Included		
Charge Battery to 80% within 12 hours	Included		
Deep Discharge Protection	Included		
DC Earth Leakage	Optional		
<b>LIGHTING CONTROL INTERFACE</b>			
External Mains Fail Test Connection	Optional		
Non-Maintained Mode Connection**	Optional		
FAR Connection **	Optional		
External Phase Fail Connection **	Optional		
24 Vdc Supply for External Contactor	Optional		
KNX / DALI / NODE Interface	Optional		
Mains Fail Test Button	Key switch included		
Volt Free Contacts	3		
<b>GENERAL</b>			
Operating Temperature	0°C - 40°C / <1000m above sea level		
Operating Humidity	5 - 90% non-condensing		
Acoustic Noise	≤6 dB @ 1metre		
Protection Degree	IP21		
Dimensions (mm) WxDxH (Excluding Batteries)	750 x 250 x 850	750 x 250 x 1250	750 x 400 x 1250
Net Weight (kgs)	Dependent on battery configuration		

\*\*only applicable if Non-Maintained Contactor Option fitted

## PowerPro ELMOD Single & Three Phase Input & Single Phase Output Static Inverter Technical Specification



MODEL	ELMOD/4	ELMOD/8	ELMOD/12	ELMOD/16	ELMOD/20	ELMOD/24
Power Rating kVA / kW	4 / 3.6	8 / 7.2	12 / 10.8	16 / 14.4	20 / 18	24 / 21.6
<b>INPUT</b>						
Nominal Voltage	220 / 230 / 240 Vac (1Ph + N + PE)		220 / 230 / 240 Vac (1Ph + N + PE) or (3Ph + N + PE)	220 V / 230 V / 240 V (1Ph + N + PE)		220 / 230 / 240 Vac (1Ph + N + PE) or (3Ph + N + PE)
Voltage Range	±25%					
Frequency Range	50 Hz ±10%, 60 Hz ±10%					
<b>OUTPUT</b>						
Nominal Voltage	220 / 230 / 240 Vac					
AC Voltage Regulation	±1%					
Frequency Range	±4%, (±0.2% battery supply)					
Power Factor	0.9					
Crest Factor	3:1					
Harmonic Distortion (Linear Load)	<3%					
Transfer Time	<0 ms					
Waveform	Sinewave					
Load Circuits	1					
Overload	120% continuous, 150% for 10mins, 175% for 1min					
Mode Operation	Changeover, Inverter and Non-Maintained selectable					
Maintained / Non-Maintained	Maintained and Non-Maintained (Standard)					
<b>BATTERY</b>						
Battery Type	VRLA AGM Maintained Free Sealed Lead Acid Batteries, Nickel Cadmium or Planté					
Internal / External	1 or 3 hour external					
End of Life to En50171	Included					
Charge Battery to 80% within 12 hours	Included					
Deep Discharge Protection	Included					
DC Earth Leakage	Optional					
<b>LIGHTING CONTROL INTERFACE</b>						
External Mains Fail Test Connection	Included					
Non-Maintained Mode Connection**	Optional					
FAR Connection **	Optional					
External Phase Fail Connection **	Optional					
24 Vdc Supply for External Contactor	Optional					
KNX / DALI / NODE Interface	Optional					
Mains Fail Test Button	Key switch with 10min / 1hr / 3hr time delay included					
Volt Free Contacts	3					
<b>GENERAL</b>						
Operating Temperature	-5°C to 40°C / <1000m above sea level					
Operating Humidity	≤95% non-condensing					
Acoustic Noise	≤55 dB @ 1 metre					
Protection Degree	IP30					
Dimensions (mm) WxDxH	510 x 850 x 1340					
Net Weight (kgs) (Excluding Batteries)	107	114	121	128	135	142

\*\*only applicable if Non-Maintained Contactor Option fitted



# PowerPro EL300DSP Three Phase Input & Output Static Inverter

## Technical Specification

MODEL	EL310DSP	EL320DSP	EL330DSP	EL340DSP	EL360DSP	EL380DSP	EL3100DSP	EL3120DSP	EL3160DSP	
Power Rating kVA / kW	10 / 9	20 / 18	30 / 27	40 / 36	60 / 54	80 / 72	100 / 90	120 / 108	160 / 144	
<b>INPUT</b>										
Nominal Voltage	380/400/415 Vac (3Ph + N + PE)									
Voltage Range	±15%									
Power Factor	0.99 @ full load									
Harmonic Distortion	<5% @ 100% load									
Frequency Range	50 Hz ±5%									
<b>OUTPUT</b>										
Nominal Voltage	230 / 400 Vac (3Ph + N + PE)									
AC Voltage Regulation	±2%									
Frequency Range	±1%									
Power Factor	0.9									
Crest Factor	3:1									
Harmonic Distortion (Linear Load)	<2%									
Transfer Time	<0.5secs									
Waveform	Sinewave									
Load Circuits	1									
Overload	120% continuous, 120 - 150% for 10mins, 150 - 180% for 1min									
Mode Operation	Changeover or Inverter selectable									
Maintained / Non-Maintained	Maintained (standard) / Non-Maintained (optional)									
<b>BATTERY</b>										
Battery Type	VRLA AGM Sealed Lead Acid Maintenance Free Batteries / Nickel Cadmium Batteries / Planté Batteries									
Internal / External	1 or 3 hour external									
End of Life to En50171	Included									
Charge Battery to 80% within 12 hours	Included									
Deep Discharge Protection	Included									
DC Earth Leakage	Optional									
<b>LIGHTING CONTROL INTERFACE</b>										
External Mains Fail Test Connection	Included									
Non-Maintained Mode Connection**	Included									
FAR Connection **	Included									
External Phase Fail Connection **	Included									
24 Vdc Supply for External Contactor	Included									
KNX / DALI / NODE Interface	Optional									
Mains Fail Test Button	Included									
Volt Free Contacts	9									
<b>GENERAL</b>										
Operating Temperature	0°C - 40°C / <1000m above sea level									
Operating Humidity	10 - 90% non-condensing									
Acoustic Noise	<62 dB @ 1metre			<64 dB @ 1metre			<68 dB @ 1metre			
Protection Degree	IP41									
Dimensions (mm) WxDxH (Excluding Batteries)	400 x 815 x 1040			515 x 855 x 1440					880 x 775 x 1900	
Net Weight (kgs) (Excluding Batteries)	91	100	173	197	209	220	232	265	482	

\*\*only applicable if Non-Maintained Contactor Option fitted

## Central Battery Units Bespoke DC Systems – AC/DC

All BPC Central Battery Units (CBU) are bespoke designs with a range of standard features and benefits providing a robust solution to meet specific customer requirements, supplied in wall mounted and free standing cabinets with options for high ingress protection.

### BATTERY

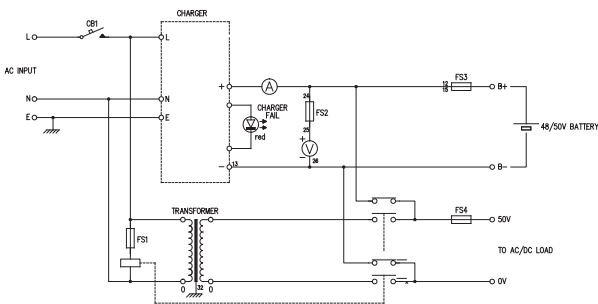
Any battery autonomy can be catered for, this will often be designed as a self-contained battery, housed in the base of the CBU. However, depending on runtime requirements, an external battery cabinet or open steel manufactured racks will be provided. Valve Regulated Sealed Lead Acid Maintenance Free 12 year design life or Nickel Cadmium 25 year design life options are available, meeting stringent emergency lighting demands.

### OPERATION

All BPC Central Battery Units typically have three variations in design: a Non-Maintained System, Maintained System and Hold Off System. These designs can then be adapted to suit individual customer requirements.

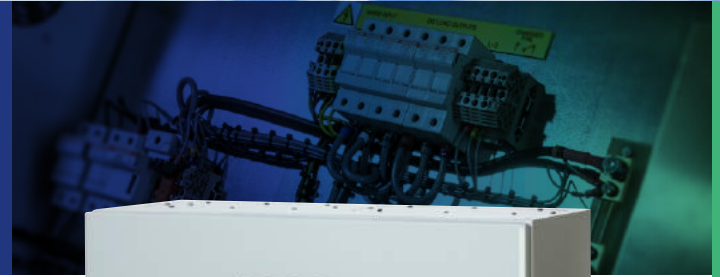
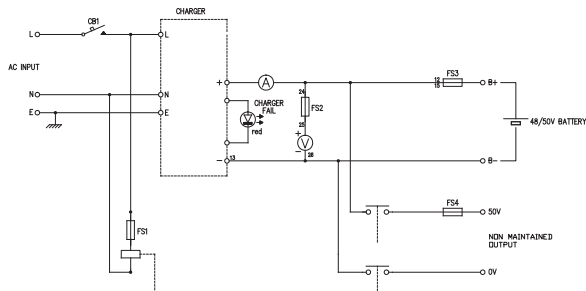
### MAINTAINED

A Maintained CBU will provide an AC supply to the lights when the AC incoming power is healthy and in the event of a mains power failure at the CBU input the luminaires will be supplied with a DC Supply.



### NON-MAINTAINED

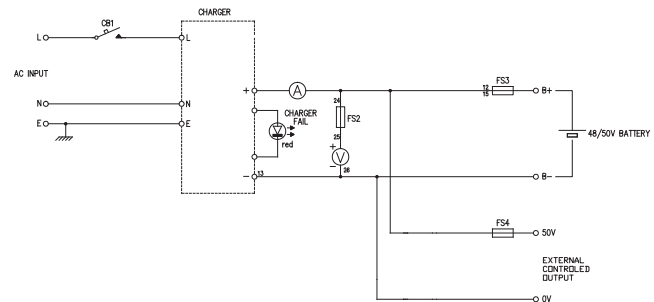
A Non-Maintained CBU will provide a DC supply in the event of a mains power failure at the CBU Input.



- » Bespoke designs
- » 12 / 24 / 36 / 48 / 50 / 110 / 220 VDC output options
- » Low voltage cut out, 'Mains On' indicator
- » Automatic reset after using manual test button
- » Extensive range of Slave Luminaires available
- » Various back up runtimes to suit specifications
- » Ventilated mild steel cabinets
- » Options for self-contained battery compartments
- » Charge current ammeter fitted as standard
- » Maintained and Non-Maintained options available
- » Metering can include:
  - Battery / Charger fail alarm LED
  - AC fail alarm LED
  - DIN72 analogue battery volt meter
  - Volt free form C contact set for alarm annunciation to BMS

### HOLD OFF DESIGN

This circuit is used when the lighting is externally controlled by hold off relays and a constant DC voltage is required to the circuit.





# Medical Isolated Power Supply (MIPS)

## Electrical Medical IT Systems

### 10kVA

- » Patient safety
- » Absolute reliability
- » Power availability

BPC Energy MIPS products are suitable for medical locations like:

- » Operating Rooms
- » Intensive Care Rooms
- » MRI Rooms
- » Recovery Rooms
- » Therapy Rooms

BPC Energy range of Medical Isolated Power Supply (MIPS) products are electrical Medical IT systems which are isolated from earth and enable insulation maintenance faults to be monitored. These MIPS systems are used in Medical Group 2 locations, according to HTM06-01-2017, to minimise risk of failure so that, in the event of a first fault to earth, supply continuity is maintained.

The purpose of MIPS products are:

- ✓ Providing PATIENT safety
- ✓ Reducing electrical shock hazard
- ✓ Reducing tripping of breakers during earth fault
- ✓ Providing monitoring and alarms for normal and abnormal conditions



## Medical Isolated Power Supply (MIPS) Features

### MIPS FRONT PANEL

Indicates input from independent sources.

### MAINTENANCE BYPASS SWITCH

The MIPS system is provided with a rotary break before make Maintenance Bypass Switch (MBS). The MBS allows the output to be connected to the ATS, or directly to the primary supply or the secondary supply, the switch also allows the output to be isolated OFF.

### INSULATION MONITOR

The MIPS system is fitted with an insulation monitor and earth fault detection system.

### TRANSFER RELAY

The MIPS system can be supplied by two different source supplies. The transfer system provides a fast changeover between supplies.

### OUTPUT BREAKERS

The output distribution can be ordered as 6, 12, 18 or 24 way double pole MCB's.

### IP41 CONSTRUCTION

The MIPS cabinet is provided with an IP41 dust filtration system at the bottom of the door with easily maintained filters.



## Medical Isolated Power Supply (MIPS) Features

### AIR CIRCULATION

Dual fan top assembly improves the overall efficiency of the system and advances independent component heat dissipation.

### EASY INSTALLATION

Top entry cable glands provide easy access to the terminals for all power, load and monitoring cable infrastructure.

### FAULT DETECTION SYSTEM (FDS)

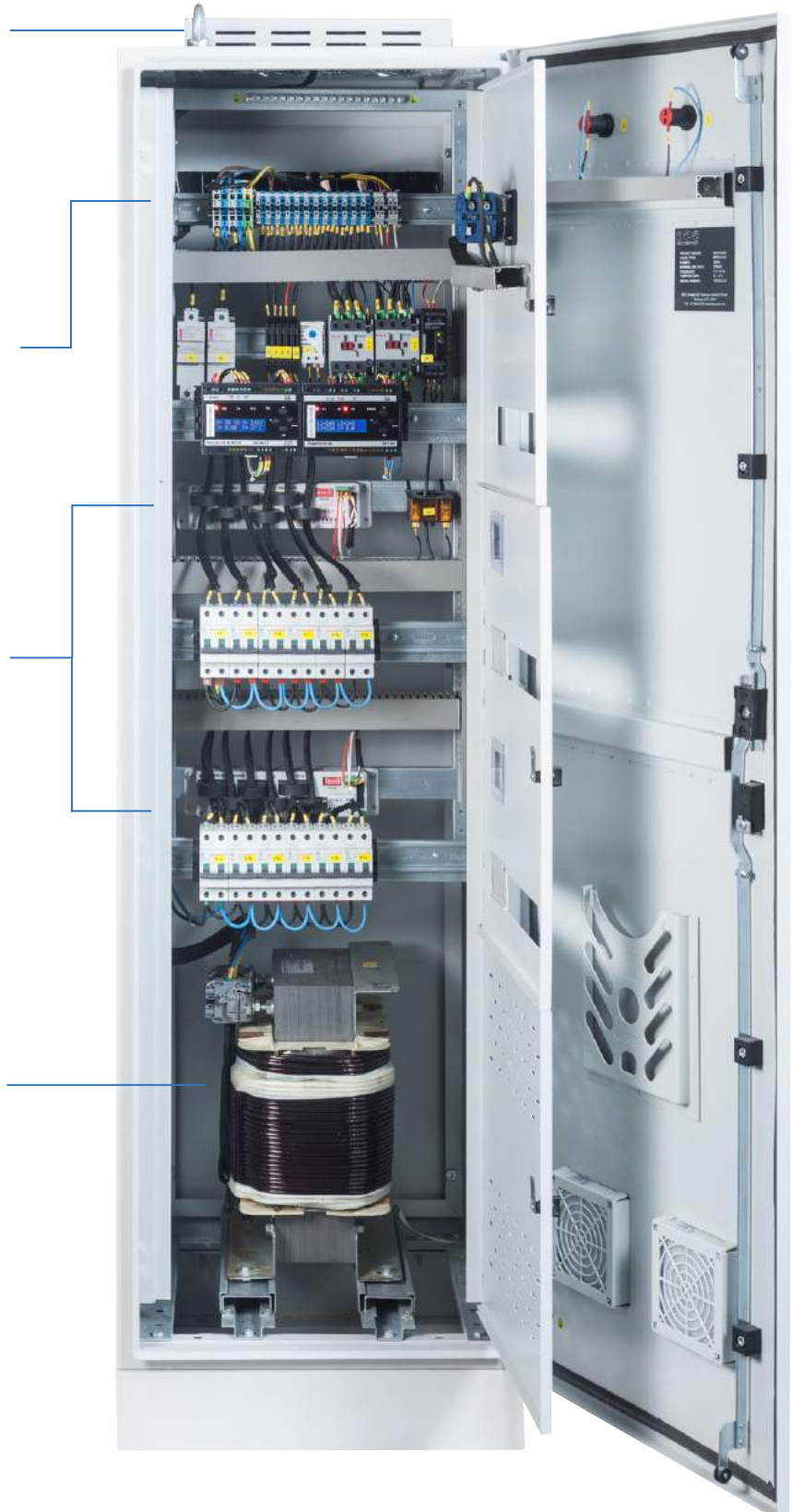
Insulation fault detection device with integrated current transformers is used for detecting insulation faults in IT systems. Insulation fault detection system consists of test device, control and indicator device, fault evaluator and current transformer.

### TRANSFORMER

BPC Medical Isolating Transformer is produced to comply with EN 61558-2-15 Standards for supplying critical loads. With a static screen placed between the primary and secondary windings is isolated from the fixed angle transformer core.

### EXTENDED WARRANTY - PEACE OF MIND

All BPC MIPS systems come with a standard five year warranty subject to there being planned, preventative maintenance measures in place.



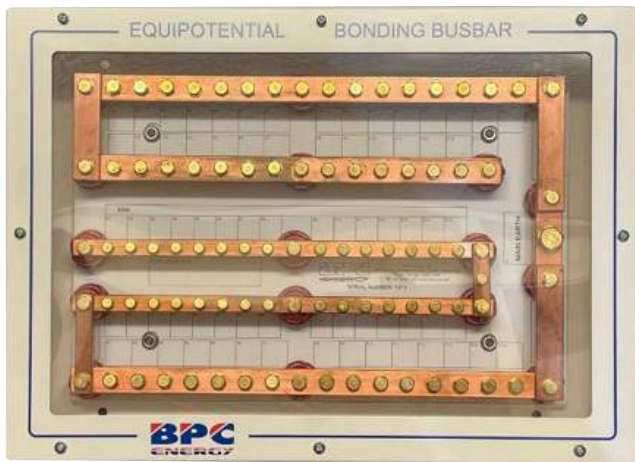


## Medical Isolated Power Supply (MIPS)™

### EQUIPOTENTIAL BONDING BUSBAR (EBB)

In Medical Locations of Group 1 and Group 2, additional earthing requirements are set out in section 710 of BS7671.

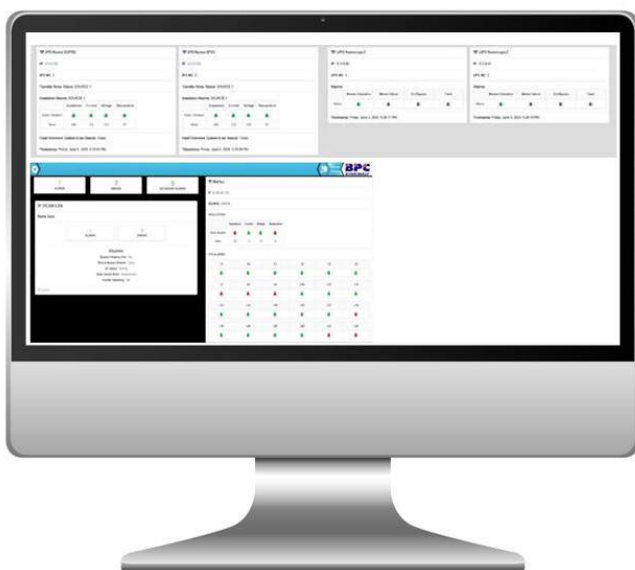
These include supplementary equipotential bonding connection points along with an associated (EBB).



### CENTRAL ALARM PANEL (CAP)

Central Alarm Panel provides the centralised monitoring of all MIPS and UPS equipment within the healthcare facility.

Central Alarm Panel includes a web browser that can be accessed anywhere on the network.



### LOCAL ALARM PANEL (LAP)

For each MIPS system, an audible and visual alarm can be provided by the LAP system which can be installed in various medical locations ensuring power availability can be monitored by medical staff.

Effective green or yellow indicators show normal and abnormal conditions. Providing the MIPS insulation, voltage, temperature and UPS alarms.



### OPERATING ROOM PANEL (ORP)

Touch Screen operating room control panel offers comfort for medical personnel enabling full control of the environmental conditions and medical devices.

Surgical teams can communicate with other medical professionals using a built-in hands-free phone with high voice quality.





## Medical Isolated Power Supply (MIPS)<sup>TM</sup> Standards

INSULATION MONITOR & EARTH FAULT DETECTION SYSTEM – IMEFD	HD-60364-7-710	Electrical installations of buildings. Requirements for special installations or locations - Medical locations
	EN61557-8	Electrical safety in low voltage distribution systems up to 1,000 VAC . and 1,500 VDC Equipment for testing, measuring or monitoring of protective measures. Insulation monitoring devices for IT systems
	EN61557-9	Electrical safety in low voltage distribution systems up to 1,000 VAC and 1,500 VDC Equipment for testing, measuring or monitoring of protective measures. Equipment for insulation fault location in IT systems
TRANSFER RELAY CONTROLLER	EN61000-6-2	Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments
	EN61000-6-4	Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments
	HD-60364-7-710	Electrical installations of buildings. Requirements for special installations or locations - Medical locations
	HD-60947-6-1	Specification for low voltage switchgear and control gear. Multiple function equipment. Automatic transfer switching equipment
	HD-60364-5-53	Low voltage electrical installations. Selection and erection of electrical equipment. Devices for protection for safety, isolation, switching, control and monitoring
INSULATION FAULT DETECTION SYSTEM – FDS	EN61557-8	Electrical safety in low voltage distribution systems up to 1,000 VAC and 1,500 VDC Equipment for testing, measuring or monitoring of protective measures. Insulation monitoring devices for IT systems
	EN61557-9	Electrical safety in low voltage distribution systems up to 1,000 VAC and 1,500 VDC Equipment for testing, measuring or monitoring of protective measures. Equipment for insulation fault location in IT systems
ENCLOSURE	EN61439-1	Low-voltage switchgear and control gear assemblies. General rules
	EN61439-2	Low-voltage switchgear and control gear assemblies. Power switchgear and controlgear assemblies
ISOLATION TRANSFORMER	EN61558-2-15	Safety of transformers, reactors, power supply units and combinations thereof. Particular requirements and tests for isolating transformers for the supply of medical locations
LOCAL ALARM PANEL – LAP	IEC 60364-7-710	Electrical installations of buildings. Requirements for special installations or locations - Medical locations
OPERATING ROOM PANEL – ORP	EN55022	Information Technology Equipment. Radio Disturbance Characteristics
	EN55024	Information Technology Equipment. Immunity Characteristics
	EN60950	Information Technology Equipment. Safety, Equipment to be installed outdoors
OTHER	BS7671:2018	Requirements for Electrical Installations. IET Wiring Regulations
	HTM06-01 (2017 Edition)	Health Technical Memorandum 06-01, Part A: 'Electrical Services Supply and Distribution'
	IEE Guidance Note 7:2015	Emphasises that a hospital electrical distribution system should be designed to provide security of supply and flexibility and safety in operation
	MEIGaN - Withdrawn by MHRA (2012)	

## Medical Isolated Power Supply (MIPS)

Electrical Medical IT systems 10kVA

Technical Specification



MODEL	MIPS – 10-6	MIPS – 10-12	MIPS – 10-18	MIPS – 10-24
Power Rating kVA	10	10	10	10
<b>INPUT</b>				
Output Voltage	230VAC			
Frequency Range	50 Hz / 60 Hz			
Isolation Level	3KV / 1MIN			
<b>OUTPUT</b>				
Output Protection	MCB			
Output Distribution	6 way	12 way	18 way	24 way
Alarm Output	Insulation Fault / Overload / Over Temperature			
Functional Test	Advanced Insulation Fault			
Enclosed Leakage Current	<0.5 u/c MA			
Isolation Fault Detection Period	<1sec			
<b>GENERAL</b>				
Cabinet Protection	IP41			
Operating Temperature	0°C / 50°C			
Storage Temperature	-15°C / 70°C			
Ventilation	Dual Fan			
Management Software	Isolation resistance by LCD screen			
Colour	RAL9003 / RAL7035			
Transfer System	ATS via Contactor			
Transfer Time	<5ms			
Response Rate	50 - 500 kΩ			
Overall Heat Dissipation	<500W			
Dimension (mm) WxDxH	500 x 500 x 1750			
Net Weight (kgs)	134		135	



# PowerMaster Series

## Automatic Voltage Regulators – Stabilised Power Protection

### 5-3000kVA

» Stability » Regulation » Industrial



**The PowerMaster AVR protects voltage fluctuations from the incoming supply affecting your load and is designed to maintain constant set voltage at all times.**

The output voltage can be monitored via the front panel analogue voltmeter and certain models are provided with high and low voltage LED indicator alarms.

The PowerMaster range includes single and three phase models and can be supplied with phase or phase & neutral options.

Wide input voltage range models are available and the standard output voltage range of these may be altered upon request.

- » Top servo motor designed voltage regulation system
- » Single and 3 phase options
- » Wide power and voltage interval
- » High reliability thanks to Microprocessor and Smart Driver
- » Fast regulation
- » High efficiency
- » Load transfer to bypass via pole charge switch
- » Safe and economic usage
- » Overcurrent and overload protection
- » True RMS digitally displayed status, input & output measurements
- » Smart fan cooling system
- » Smart short circuit protection on system output line

## PowerMaster Series – 1/1 - 5 - 50kVA Technical Specification

Model	AVR105	AVR107	AVR110	AVR115	AVR120	AVR125	AVR130	AVR140	AVR150
Power kVA	5	7.5	10	15	20	25	30	40	50
<b>Regulator Input</b>									
Input Voltage Settings	110 – 240 / 160 – 260 / 180 – 260 VAC								
Input Voltage Range	90 – 285 VAC								
Operation Frequency	47 - 65 Hz								
Line Input Protection	Overcurrent, Low and High voltage protection								
<b>Regulator Output</b>									
Output Voltage	*220 / 230 / 240 VAC RMS ±1%								
Overloading	10 Sec. 200% Load								
Correction Speed	~ 90 Volt / Sec.								
Correction Range	~ 90 Volt / Sec. (160 VAC – 260 VAC)								
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs. (Optional)								
<b>General</b>									
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic								
Cooling	Smart Fan System								
Measured Value Monitor	RMS Panel Voltmeter (74 x 74mm) output voltage and line voltage monitorisation								
Total Efficiency	>96%								
Mechanical By-pass	"Manually Controlled Line – PAKO Switch Selects Voltage Regulator" Switch Turn On / Off								
Protection Level	IP 20								
<b>Environmental</b>									
Working Temperature	- 10°C / 50°C								
Storage Temperature	-25°C / 60°C								
Relative Humidity	<95%, DIN (40040)								
Working Altitude	<300m								
Acoustic Level	<50 dB (1m <sup>2</sup> )								
Standards	CE / ISO 9001								
<b>Dimensions</b>									
WxDxH (mm)	55 x 37 x 30			60 x 42 x 32		50 x 50 x 75		50 x 60 x 75	
Weight (kgs)	30	34	47	55	95	110	130	155	180

\*Output voltage cannot be adapted once set, as this is set at a factory level.



## PowerMaster Series – 3/3 - 10 - 150kVA

### Technical Specification

Model	AVR310	AVR315	AVR322	AVR330	AVR345	AVR360	AVR375	AVR3100	AVR3120	AVR3150
Power kVA	10.5	15	22.5	30	45	60	75	100	120	150
<b>Regulator Input</b>										
Input Voltage Settings	190 - 485 / 275 - 450 / 310 - 450 VAC									
Input Voltage Range	155 - 490 VAC									
Operation Frequency	47 - 65 Hz									
Line Input Protection	Overcurrent, Low and High voltage protection									
<b>Regulator Output</b>										
Output Voltage	*380 / 400 / 415 VAC RMS ±1%									
Overloading	10 Sec. 200% Load									
Correction Speed	~ 90 Volt / Sec.									
Correction Range	~ 90 Volt / Sec. (160 VAC – 250 VAC)									
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.									
<b>General</b>										
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic									
Cooling	Smart Fan System									
Measured Value Monitor	RMS Panel Voltmeter (74 x 74mm) output voltage and line voltage monitorisation									
Total Efficiency	≥96%									
Mechanical By-pass	“Manually Controlled Line – PAKO Switch Selects Voltage Regulator” Switch Turn On / Off									
Protection Level	IP 20									
<b>Environmental</b>										
Working Temperature	- 10 °C / 50 °C									
Storage Temperature	-25 °C / 60 °C									
Relative Humidity	≤95%, DIN (40040)									
Working Altitude	≤200m									
Acoustic Level	≤50 dB (1m <sup>2</sup> )									
Standards	CE / ISO 9001									
<b>Dimensions</b>										
WxDxH (mm)	40 x 63 x 110			40 x 63 x 119		88 x 60 x 140			93 x 65 x 165	
Weight (kgs)	95	105	125	145	165	260	280	310	400	425

\*Output voltage cannot be adapted once set, as this is set at a factory level.

## PowerMaster Series – 3/3 - 200 - 3000kVA Technical Specification

Model	AVR 3200	AVR 3250	AVR 3300	AVR 3400	AVR 3500	AVR 3600	AVR 3800	AVR 31000	AVR 31250	AVR 31500	AVR 31600	AVR 32000	AVR 32500	AVR 33000
Power kVA	200	250	300	400	500	600	800	1000	1250	1500	1600	2000	2500	3000
<b>Regulator Input</b>														
Input Voltage Settings	190 - 485 / 275 - 450 / 310 - 450 VAC													
Input Voltage Range	155 - 490 VAC													
Operation Frequency	47 - 65 Hz													
Line Input Protection	Overcurrent, Low and High voltage protection													
<b>Regulator Output</b>														
Output Voltage	*380 / 400 / 415 VAC RMS ±1%													
Overloading	10 Sec. 200% Load													
Correction Speed	~ 90 Volt / Sec.													
Correction Range	~ 90 Volt / Sec. (160 VAC – 250 VAC)													
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.													
<b>General</b>														
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic													
Cooling	Smart Fan System													
Measured Value Monitor	RMS Panel Voltmeter (74 x 74mm) output voltage and line voltage monitorisation													
Total Efficiency	>97%													
Mechanical By-pass	"Manually Controlled Line – PAKO Switch Selects Voltage Regulator" Switch Turn On / Off													
Protection Level	IP 20													
<b>Environmental</b>														
Working Temperature	- 10°C / 50°C													
Storage Temperature	-25°C / 60°C													
Relative Humidity	<95%, DIN (40040)													
Working Altitude	<3000m													
Acoustic Level	<50 dB (1m <sup>2</sup> )													
Standards	CE / ISO 9001													
<b>Dimensions</b>														
WxDxH (mm)	180 x 120 x 122			60 x 117 x 170	180 x 120 x 152		210 x 120 x 185		210 x 200 x 185		210 x 260 x 185		240 x 260 x 195	TBA
Weight (kgs)	1050	1100	1200	1650	2000	2100	2900		3450	3900	4300	4750	6000	TBA

\*Output voltage cannot be adapted once set, as this is set at a factory level.

# Transfer Switches

## STS & ATS Systems – Single & Three Phase

» Dual Source

» Industrial

» Reliable



**BPC offers a variety of transfer switches to provide switching between two independent AC power sources.**

Transfer Switches ensure “highest availability” of the power supply to sensitive and critical applications. The installation of an Automatic Transfer Switch or Static Transfer Switch ensures 2N architecture is achieved and allows loads with single feeds to always be supplied by the highest quality of power. The use of transfer switches and 2N architecture increases the maintainability of the switch panels and upstream equipment.

» Data Centres

» Industrial

» IT Solutions

» Single Power Supply Systems

## Automatic Transfer Switches

BPC can provide intelligent Automatic Transfer Switches that can be powered from two UPS Systems, different mains supplies or a combination of both. The system also has distribution with compatibility for eight network devices to be connected from its output sockets.

Higher reliability levels are achieved by using dual power sources and outlets that can be programmed to schedule individual device shutdowns, or delay priorities ensuring maximum uptime and control for the user.

The front panel has an LCD display providing input & output status, alarms and key measurements information which can also be remotely monitored using RS232, USB or Simple Network Management Protocol (SNMP) communications.

- **Powered by two independent power sources**
- **Dual power supply for redundancy**
- **Provides seamless switching for critical IT equipment**
- **Selection of preferred source via the front panel**
- **19" rack design (1U) to fit into diverse environments**
- **Built-in USB and RS232 communications**



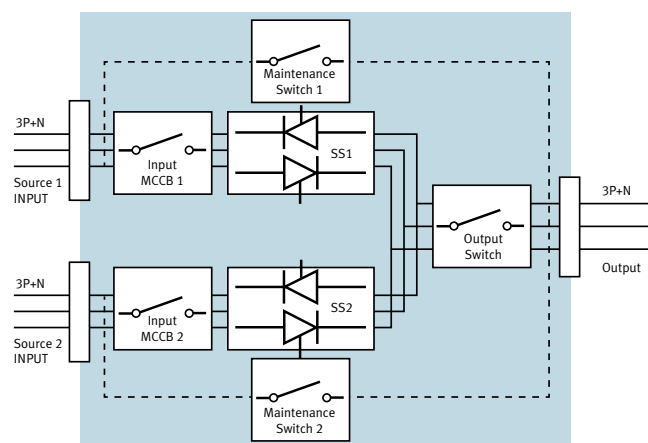
## Static Transfer Switches

Automatic Static Transfer Switches (STS), enable automatic or manual transfer between two AC power supply sources, ensuring a transfer time of less than 1/4 of a cycle.

The use of STS within an electrical distribution system provides a means of secure protection against any potential disruption of the power supply, due to interruptions of the supply source or failure of the distribution lines caused by environmental phenomena or human error.

The STS provides a guaranteed means of switching between two alternative and independent power sources thus ensuring a continued supply of power to any critical load. The switching can either be AUTOMATIC, should the incoming supply fall outside the predefined window of operation (user-defined), or MANUAL, should an operator want to force switching between the two input supply sources from the mimic display panel or via a remote connection.

- **Selectable preferred source and method of transfer**
- **Power redundancy**
- **Power blackout protection**
- **Automatic static switching ultra fast Break Before Make transfer permits switching between two sources**
- **Power event logging**
- **Less than 5ms transfer between synchronised sources**
- **Switched neutral option maintains isolation between sources**
- **Remote management of the power events**
- **Output current capability up to 100% for short time**
- **Hot swappable option for 2 pole range**



**Single Phase Model Range:**  
2 pole = 32A / 63A / 120A  
Standard & Hot Swappable Options



**Three Phase Model Range:**  
3 pole = 50A - 800A  
4 pole = 50A - 800A





## Automatic Transfer Switches

### Technical Specification



MODEL	ATS - 16
Input Voltage	220 / 230 / 240 VAC
Input Voltage Range	180–258 VAC
Input Frequency	50 / 60 Hz
Maximum Input Current	16A
Output Voltage	220 / 230 / 240 VAC
Maximum Output Current	10 A for IEC-C13 outlets / 16 A for IEC-C19 outlets
Communications	USB / RS232
Transfer Time	9-12ms (typical), 16ms (max)
Operating Temperature	0 - 95% RH at -5°C to 45°C (non-condensing)
Dimensions (mm) WxDxH	430 x 330 x 44 (1U)
Weight (kgs) including accessories	8kgs

## Static Transfer Switches

### Technical Specification



MODEL	2 POLE	3 POLE	4 POLE
Range	32A / 63A / 120A	50A / 100A / 150A / 200A / 250A / 300A / 400A / 600A / 800A	
Input Voltage (Ph-Ph)	220 / 230 / 240 VAC (1Ph + N + PE)	380 / 400 / 415 VAC (3Ph + N + PE)	
Input Voltage Range	180 - 264 VAC (Line to Neutral)		
Input Frequency	50 / 60 Hz		
Input Frequency Range	46-54 Hz (for 50 Hz) 56-64 Hz (for 60 Hz)	48 - 65 Hz (upper and lower Limited adjustable)	
Transfer Type	'Break Before Make'		
Transfer Methods	Automatic / Manual / Remote		
Transfer Control	Synchron	Adjustable display delay (non-synchron)	Zero current (non-synchron)
Transfer Time	≤4 msec for synchronous sources, ≤10 msec for non-synchronous sources		
Switching Type	2 poles: 1 phase + neutral switching	3 poles: 3 phase switching	4 poles: 3 phase + neutral switching
Output Current Crest Factor	3:1		
Admissible Overload	0 - 100% continuous / 101 - 150% for 1min / 151 - 200% for 10sec / >200% for 250ms		
LCD Panel and Mimic	Standard		
Protections	Output overload and short circuit protection, over temperature protection, back feed protection, SCR fault protection		
Communications	RS232 standard / RS485 optional		
TCP/IP Connections	Optional		
Dry Contacts (programmable relay outputs)	3	4	
Cooling	Forced cooling (redundant fans)		
Operating Temperature	0°C - 40°C		
Storage Temperature	-10°C up to +50°C		
Relative Humidity	90% max. (non-condensed)		
Protection Degree	IP20		
Standards	EN62310-1, EN62310-2		

## Outdoor Cabinets High IP Cabinet Solutions

» Bespoke » Up to IP55 » Industrial



**BPC can provide customised outdoor cabinets designed and adapted to suit all your specifications and requirements.**

Using high quality materials, all standard versions are sandblast and water blast proof, with a protection degree that can reach IP55. A variety of options and accessories are available including bespoke air conditioning and anti-condensation heaters if required.

BPC can offer the complete solution, designing internal UPS or Static Inverter systems with a battery autonomy that can reach 3hr+, all integrated into an outdoor high IP enclosure.



## Features:

- » Total flexibility with design
- » Cabinets can be configured with one or several front, back, side panels or doors
- » Manufactured with aluminium profiles and stainless steel screws and bolts. The structure of the cabinet is capable of supporting heavy duty equipment.
- » Degree of protection against ingress of water and solid objects, IP55. Degree of protection against mechanical impacts, IK10
- » Protection up to IP65 available on request
- » Aluminium hinges reinforced with stainless steel pins
- » Ventilation grills on all panels and doors
- » Removable side panels, all removable parts have a rubber sealing in order to secure the protection level
- » The front door is supplied with an ergonomic handle with three locking points, security locking cylinder and a master key system. The doors include a blocking system which allows the doors to open at 120° angle.
- » Forced air ventilation can be added with roof mounted fan trays that can be thermostatically controlled
- » Double wall – the interior of the cabinet works like a conductor similar to a radiator as the aluminium profiles have been assembled in a way that they are capable to have heat transmission
- » The cabinets have a double roof which permits the air flow between the two plates and works as an air conductor to improve the passive heat dissipation. Four eye bolts M-10 are also included to allow elevating the cabinet once equipped
- » Finish according to RAL requirements
- » 19" rackmount profile options
- » All the panels and doors are connected with earth connection cable
- » All outdoor cabinets have been tested in homologated laboratories, including:
  - EMC test
  - Wind tunnel test (up to 210 km/h)
  - Vibration test (similar to earthquake test)
  - Corrosion test
  - Temperature test



Roof mounted IP55 Outdoor UPS Cabinet

## Accessories:

- Air conditioning units
- Heating systems
- Fan unit and thermostat
- Internal equipment supports
- Metering box
- Handle options including padlock options
- IP55 filters in the door, panels and bottom roof
- Distribution unit



# PowerStor™ Battery Range

## Standby Battery Systems

» Versatile      » Performance      » Long Life



**In today's environment, battery systems must perform in the most challenging applications. The versatile PowerStor range of sealed lead acid maintenance free batteries has all the answers with a wide choice of capacity ratings in compact cases for both standard and extended design life suitable for both cyclic and float applications.**

BPC is at the forefront of modern power protection technology and our expertise in the design, development and manufacture of special and custom battery systems enables us to meet the diverse needs of the leisure, industrial, commercial, emergency services, medical and defence markets.

- » Fire alarm and security systems
- » Industrial control systems
- » Emergency Lighting
- » Uninterruptible Power Supplies
- » Model and toy products
- » Sports and leisure equipment
- » Computer/network products
- » Mobility vehicles
- » Telecom equipment
- » Portable equipment



## PowerStor Features and Benefits

**Low Self Discharge** – Allowing the battery to be stored for extended periods without permanent loss of capacity.

**Electrolyte Suppression System** – PowerStor’s unique construction and sealing technique ensures no free electrolyte can escape.

**Operation in any Orientation** – Design flexibility allows operation in any orientation with no loss of performance or concern for electrolyte leakage (exception of continuous use in the inverted position).

**Compact PowerStor Design** – Offers a high energy density, providing excellent power, volume and weight ratios.

**Float or Cyclic use High Performance Design** – Allows use for both cyclic and continuous float applications.

**Wide Operating Temperature Range** – PowerStor batteries can be operated in temperatures of -10°C to +50°C. However, continuous use at higher levels does affect service life.

**Flexible Design** – PowerStor batteries are manufactured using a range of terminals to suit most standard applications but custom designs are available.

**Deep Discharge Recovery** – Unique processes are used in the grid alloy and electrolyte providing easy recharge to normal levels after being deeply discharged.

The PowerStor range has a wide choice of technologies and capacity ratings for both standard and extended design life, suitable for engine starting, Cyclic and float applications. BPC extended battery range & accessories includes:

- » Sealed Lead Acid AGM Batteries
- » Rackmount Front Access Sealed Lead Acid AGM Batteries
- » Nickel Cadmium Vented Alkaline Batteries
- » Cycling Sealed Lead Acid Batteries for Electric Vehicle Applications
- » Battery Enclosures
- » Battery Options & Accessories
- » Battery Monitoring System

*Containerised Solution - Anaerobic Digestion Plant, UK*



## PowerStor Sealed Lead Acid Maintenance Free

### PS (standard) Series

Utilising the latest advanced absorbed glass mat (AGM) and gas recombination technology, PowerStor valve regulated sealed lead acid (VRLA) batteries ensure maintenance free, reliable performance and outstanding service life with 5 years expectation in float standby applications.



### PSL (long life) Series

For mission critical applications requiring longer in-service life the PowerStor PSL range is available with an enhanced grid and separator design. As a result of the largely increased battery life, up to 12 years in optimum float conditions, it is possible that electrical equipment can be supported throughout its own full service life without it being necessary to change the battery.



### PSLIFR (2V- 15yr life) Series

The ultimate in reliability, quality, technology and safety, the PowerStor PSLIFR range of 2 volt single cell batteries has excellent service life up to 15 years in optimum float conditions. Each cell has a flame retardant case and lid as standard and meet BS6290 Part 4 specifications.





## PowerStor Special Application Batteries

### POWERSTOR – PSL RACK RANGE

The PowerStor PSLRACK range of sealed lead acid batteries is designed for mission-critical telecommunication and industrial applications requiring longer in-service life, up to 10 years in optimum float conditions. The batteries are designed to be compatible and able to fit in 19" telecom cabinets with ease. With a wide choice of capacity ratings in compact rackmount cases, the PSLRACK range can suit any autonomy requirements.



### POWERSTOR – NICKEL CADMIUM RANGE

Nickel Cadmium Batteries are manufactured in basic ranges to match specific operating conditions and provide different performance characteristics. All nickel cadmium batteries use relatively expensive materials to combine maximum performance with minimum maintenance and optimum life of 20 to 25 years. Thus, the nickel cadmium battery may be more expensive in the initial cost than lead acid batteries but will be considerably more cost effective over the long term.



### POWERSTOR – GEL RANGE

For mission critical deep cycle applications requiring longer in-service life, the PowerStor Gel range is available with an enhanced grid / separator design and a gelled electrolyte introduced to the cell by means of custom built vacuum filling machine technology. As a result, Gel batteries have many advantages over AGM such as full recovery from deep discharge, good tolerance to higher temperature applications, excellent performance over long discharges and improved charge acceptance due to low internal resistance so it is important to choose the right battery for your application.



### POWERSTOR – OPzV RANGE

OPzV series is Valve Regulated Lead Acid battery that adopts immobilized GEL and Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN standards and with die-casting positive grid and patented formula of active material OPzV series exceeds DIN standard values with more than 20 years floating design life at 25°C and it is the best solution for cyclic use under extreme operating conditions.



## PowerStor Battery Analysis & Care System (BACS)



Civil Aviation Authority Installation, Europe

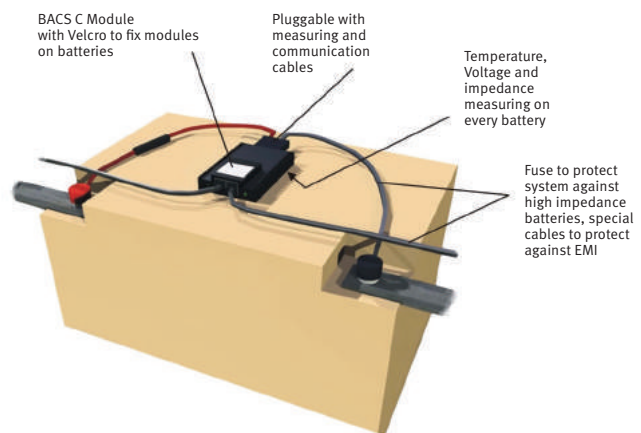
BPC BACS is the most advanced product of its kind on the market today. An Ethernet integrated battery monitoring and management system, BACS uses web management technology to monitor the temperature, internal resistance and voltage of every single battery in a given system.

In critical standby applications the battery can be a large integral part of the system and can also be an unpredictable element of the design. Battery condition can be invisible and not determined from its appearance making early diagnosis hard, especially if problems have been experienced in transit, storage, installation, poor site conditions or misuse causing failure of just one cell which can lead to open-circuit of a complete battery.

The analysis part is the continuous checking of the internal resistance, temperature and voltage of every single battery block. The care part is an equalisation process that corrects the charging voltage for each battery block as well as constant monitoring and controlling. In addition, it can manage environmental measurements such as temperature, humidity etc., as well as the UPS and Inverter system.

- » Monitoring and regulating the charging process
- » Individual voltage regulation through the equalising process
- » Equalisation to avoid overcharging and undercharging
- » Indicators to alert battery problems
- » Protection of neighbouring batteries
- » Increase battery capacity
- » Early warning and alert system permits early treatment
- » UPS / Inverter power manager
- » MODBUS / PROFIBUS / LONBUS / SNMP compatible
- » Analysis software provided
- » Effectively extends the battery life expectancy
- » Reduces frequent site inspection and the need for manual measurements
- » Very efficient and economical method of testing
- » Intelligent battery disconnection

BACS effectively mitigates the possibility of overcharging the batteries, helping to prevent gassing and drying, as well as alleviating the possibility of undercharging, preventing sulfation. Through the equalisation process, the batteries are kept at an optimal charging voltage and therefore, in an optimal state of health. By managing the batteries charging voltages, BACS vastly improves the durability and reliability of the system.





## PowerStor Battery Analysis & Care System (BACS)

The web browser interface of the system is designed for easy configuration, displaying all system values and events and alarms through a flexible event manager.

The BACS WebManager acts as the central control unit by gathering, evaluating and storing all information on its internal flash memory. This can log all system data for a duration of at least 6 months up to 3 years dependent on the size of the system. All data can be downloaded and archived over the network in order to free-up storage capacity for further data logging and analysis using the BACS Viewer software or other graphical programmes.

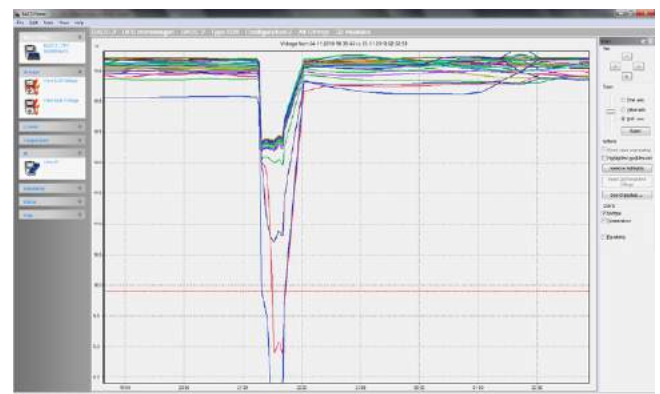
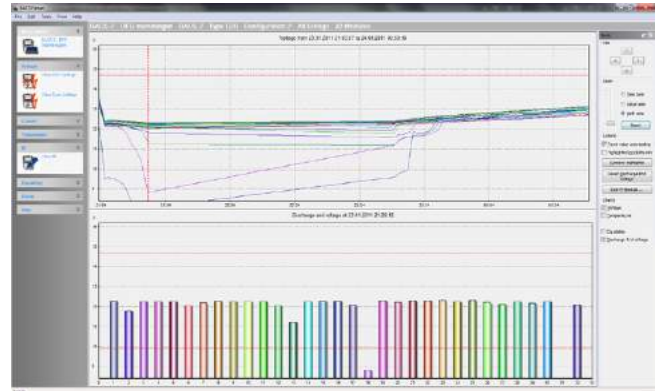
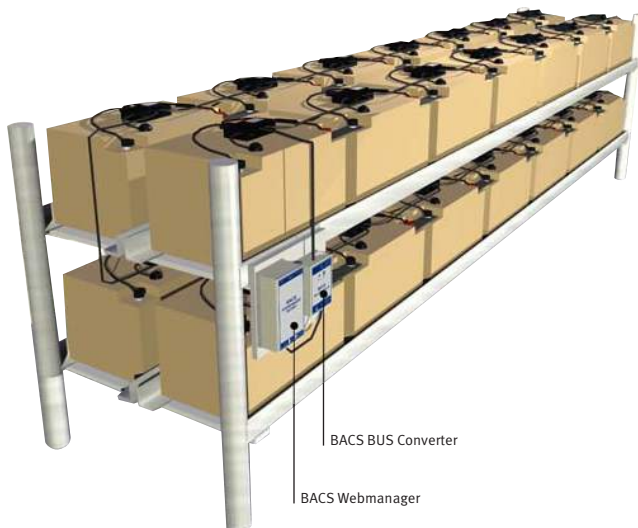
BPC BACS monitors key battery parameters and sets thresholds, therefore allowing advanced warnings, via audio, video and network messages, of a system event that requires attention.

### ENHANCED MAINTENANCE

Typical battery problems like sulfation, gassing, dry-out and thermal runaway are easily detectable given proper monitoring.

The BPC BACS improves service quality by providing remote monitoring through the internet, VPN or any other network that allows downloading of real time data and battery history.

It is possible to test batteries without disconnecting them from the system meaning that testing and maintenance can take place under real operating conditions and requires no downtime.



### EXTENDED BATTERY LIFE

The service life of a battery string depends on the weakest cell of the weakest battery in a string. The BACS equalising process allows each of the batteries within a string to be maintained at optimal voltage levels, eliminating the ill effects of improper charging. The constant care provided by the equalising process has been shown to increase service life by more than 30%.

### BATTERY PROTECTION

The BPC BACS system can be the protective entity in the system by continuously monitoring each parameter, and a DC Isolator can be tripped if the batteries hit alarm levels in impedance, temperature or voltage. This helps eliminate and prevent thermal runaway of the battery.

### ALERTING

The BPC BACS system continuously monitors high and low parameters of each individual battery block. It will send out warnings and then alarms when different limits are reached. These alerts are sent instantly to the person responsible for maintenance via email or any other compatible device.

# PowerSolar™ Inverter Series

3000VA – 5000VA

» Solar

» Green

» Compact

VFD



The BPC PowerSolar Inverter combines functions of an inverter, solar charger and battery charger to offer uninterruptible power. The LCD display offers comprehensive user-configurable information such as battery charging current, AC/Solar charger priority, and acceptable input voltage depending on the application.

The BPC PowerSolar Inverter series includes the following options:

**MPPT** – Maximum Power Point Tracker system. Its function is to maximize the energy available from the connected solar module arrays at any time during its operation.

**PWM** – Pulse Width Modulation. Used in inverters to give a steady output voltage irrespective of the load. PWM Inverters have additional circuits for protection and voltage control.





## PowerSolar™ MPPT Inverter 3000VA – 5000VA

### Technical Specification

- Wide DC input range
- Compatible to mains voltage or generator power
- Auto restart while AC is recovering
- Overload and short circuit protection
- Smart battery charger design for optimized battery performance
- Cold start function
- Optional parallel operation up to 9 units
- Zero (oms) transfer time to protect mission-critical loads such as servers and ATMs
- Removable LCD control module with multiple communications
- Built-in Bluetooth for mobile monitoring (Android App is available)
- Supports USB On-the-Go function
- Reserved communication port for BMS (RS485, CAN BUS or RS232)
- Pure sine wave solar inverter
- Selectable high power charging current

MODEL	PSOLAR - M <sub>3</sub>	PSOLAR - M <sub>5</sub>
Power Rating VA / W	3000 / 3000	5000 / 5000
Parallel Capability	Up to 9 units	
<b>INPUT</b>		
Voltage	230 VAC	
Selectable Voltage Range	110 - 280 VAC	
Frequency Range	50 Hz / 60 Hz (auto sensing)	
<b>OUTPUT</b>		
AC Voltage Regulation (Battery Mode)	230 VAC ±5%	
Output THDv	≤3% for Linear Load, ≤8% for non-linear load	
Surge Power	6000VA for 5 sec	10000VA for 5 sec
Efficiency (Peak)	93% at Line Mode, 90% at Battery Mode	
Transfer Time	0 ms	
Waveform	Pure Sinewave	
<b>BATTERY</b>		
Battery Voltage	24 VDC	48 VDC
Floating Charge Voltage	27 VDC	54 VDC
Overcharge Protection	34 VDC	66 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
Solar Charger Type	MPPT	
Maximum PV Array Open Circuit Voltage	145 VDC	
Maximum PV Array Power	1500 W	4000 W
MPP Range @ Operating Voltage	30 - 115 VDC	60 - 115 VDC
Maximum Solar Charge Current	60 A	80 A
Maximum AC Charge Current	60 A	
Maximum Charge Current	120 A	140 A
<b>ENVIRONMENT</b>		
Humidity	5% to 95% relative humidity (non-condensing)	
Operating Temperature	0°C to 55°C	
Storage Temperature	-15°C to 60°C	
<b>PHYSICAL</b>		
Dimensions (WxDxH) mm	303 x 140 x 525	
Net Weight (kgs)	13	13.5
Communication Interface	USB / RS232 / RS485 / Bluetooth / Dry Contact	



## PowerSolar™ PWM Inverter 3000VA – 5000VA

### Technical Specification

- Compatible to mains voltage or generator power
- Auto restart while AC is recovering
- Overload and short circuit protection
- Smart battery charger design for optimized battery performance
- Cold start function
- Pure sine wave solar inverter
- Selectable high power charging current
- Wide DC input range
- Selectable input voltage range for home appliances and personal computers
- Configurable AC/Solar input priority via LCD setting

MODEL	PSOLAR - P3	PSOLAR - P5
Power Rating VA / W	3000 / 3000	5000 / 5000
<b>INPUT</b>		
Voltage	230 VAC	
Selectable Voltage Range	170 - 280 VAC (for personal computers); 90 - 280 VAC (for home appliances)	
Frequency Range	50 Hz / 60 Hz (auto sensing)	
<b>OUTPUT</b>		
AC Voltage Regulation (Battery Mode)	230 VAC ±5%	
Surge Power	6000VA	10000VA
Efficiency (Peak)	90% - 93%	
Transfer Time	10 ms (for personal computers); 20 ms (for home appliances)	
Waveform	Pure Sinewave	
<b>BATTERY</b>		
Battery Voltage	24 VDC	48 VDC
Floating Charge Voltage	27 VDC	54 VDC
Overcharge Protection	33 VDC	63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
Maximum PV Array Open Circuit Voltage	80 VDC	105 VDC
Maximum PV Array Power	1200 W	2400 W
MPP Range @ Operating Voltage	N/A	N/A
Maximum Solar Charge Current	50 A	50 A
Maximum AC Charge Current	25 A	60 A
Maximum Charge Current	70 A	110 A
<b>ENVIRONMENT</b>		
Humidity	5% to 95% relative humidity (non-condensing)	
Operating Temperature	-10°C to 50°C	
Storage Temperature	-15°C to 60°C	
<b>PHYSICAL</b>		
Dimensions (WxDxH) mm	285 x 100 x 334	300 x 100 x 440
Net Weight (kgs)	6.3	8.5
Communication Interface	USB / RS232	



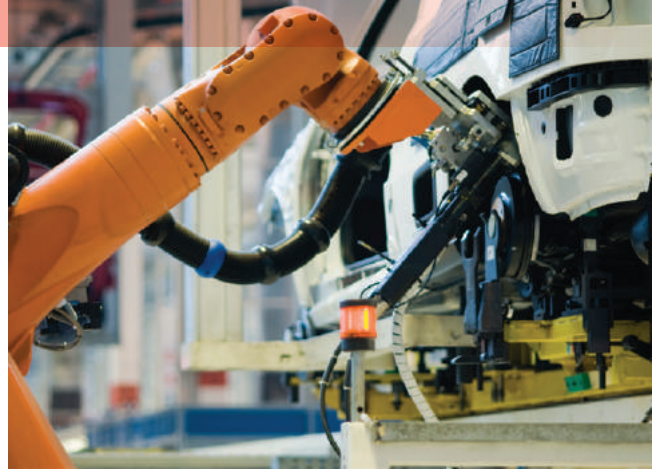
# Industrial Products

## Specialised Power Protection Products

### FREQUENCY & VOLTAGE CONVERTERS

The PowerPro HP range of products offers very flexible technology which can be designed for frequency conversion 50 Hz, 60 Hz or 400 Hz solutions and/or voltage changes enabling us to meet your industrial specification and requirements.

All PowerPro FC and VC ranges have an enviable reputation for consistent reliability, ease of installation and maintenance, making them ideal for intelligent control equipment, oil, gas and petrochemical industry, hospital and medical, airport ground support, defence, avionics and navigation aid applications.



### AC/DC POWER SUPPLY COMPLETE SYSTEM

BPC offers a wide range of standard and customised DC power supply systems using the modular rectifier technology. All systems are scalable, redundant and can be configured according to the customer's requirements. Due to the hot swappable technology, all systems have high availability and can be updated to the actual power requirement during operation. This guarantees long-lived DC power supplies without any interruption of the load supply.



### CUSTOMISED HYBRID POWER SUPPLY SYSTEMS

The PowerPro HP UPS technology can be combined with modular DC power supplies to provide an effective hybrid AC/DC power supply system. It is designed to give both UPS and DC outputs with all the flexibility and adaptability needed. This modern, compact hybrid AC/DC system has an enviable reputation in consistent reliability, ease of installation and maintenance making it ideal for telecommunications, instrumentation, industrial, defence, medical and process control applications.



## SWITCH TRIPPING & BATTERY CHARGERS

The BPC range of switch tripping and closing duty, fully automatic battery charger systems provide a reliable and robust solution for all your switch-gear tripping requirements. Utilising the latest high efficiency switch-mode technology, these systems are suitable for continuous charging of all common battery types, such as sealed lead acid VRLA / AGM, GEL, flooded lead acid and Nickel Cadmium. Conventional or intelligent multi-stage charging profiles are utilised to ensure maximum battery life and all systems are designed for permanent connection to the batteries, maintaining them in a fully charged condition without overcharging.



## OUTDOOR 2kVA UPS

The PowerPrem Outdoor 2kVA UPS is designed to keep your system operational in adverse conditions specifically for harsh environments and operating temperatures from -40°C to +70°C. The system is a robust unit complete with an LCD display panel providing control, measurements and fault analysis, whilst boasting full intelligent communication options including RS232, USB and SNMP making it ideal for the more challenging of applications.



## TELECOM SYSTEMS

Solutions for both rectifier and battery charging applications are based on modular primary switched mode power systems with a compact design and very high power density. The compact modules enable a lot of new application fields in industrial environments, especially in constricted installation facilities. All systems have the capability for further modules to be added in parallel operation resulting in high-grade flexibility and reliability by providing N+1 configuration.



## INVERTERS – DC/AC SYSTEMS

BPC inverters are very robust units with a high overload ability likely to be used in rugged industrial environments and in offshore applications.

The 19" versions have connectors at the rear. On demand, several inverters can be connected in parallel operation in order to increase the power or to increase the availability (redundant operation). Additional electronic bypass switches can be used for a further increase in capability of AC power supply systems.



## GENERATORS

BPC has an excellent range of super-silenced, high-specification generators which are very competitively priced and designed for all installation types.

BPC's product range includes diesel powered generating sets from 5kVA to 3000kVA single or three phase, low or medium voltage and are available for a wide range of applications.





# Solar Bespoke Commercial Systems

## Tomorrow's Generation Today

» Renewable

» Peak Efficiency

» Quality

**BPC Solar photovoltaic (PV) systems are essential for the growing renewable market and convert free solar energy – the most abundant energy source on the planet – directly into solar power. They produce solar electricity in a noise-free environment without emissions of greenhouse or any other gasses.**

Systems supply solar electricity to many applications ranging from private homes, commercial buildings or remote sites far away from human inhabitancy.

BPC can offer solutions directly connected into the main electricity “Grid Tie” network. This means that during the day, solar electricity generated can either be used immediately or sold to one of the electrical supply companies. In the evening, when the solar system is unable to provide electrical energy, power can be bought back from the network.

Standalone solar systems have been used for many years to supply applications where mains electricity power is not available and BPC can provide an alternative solution, most often with deep cycling lead acid batteries.

Examples include:

- » **Monitoring stations**
- » **Radio repeaters**
- » **Remote ATMs**
- » **Telephone kiosks**
- » **Street lighting**



*Solar farm constructed in Dorset, UK totalling near 7MW and 26,923 solar panels*

BPC solar systems are now being widely used in the developing world, particularly where the electricity grids are unreliable or non-existent but the demand for critical applications such as medical, telecommunications and banking are essential, often making solar power supplies the most economical option.

# Advanced Power Conversion Solutions

## SOLAR PANELS

BPC offer a full range of Solar Panels with quality technology to suit design requirements, location and type of installation. BPC design a cost effective solution to ensure both higher and lower peak efficiencies are met. It is important when designing solar systems as a whole to balance price with quality.



## POWERSOLAR INVERTER

Maximum Power Point Tracker system.  
Its function is to maximize the energy from the connected solar module arrays at any time during its operation.



## SOLAR BATTERIES

The BPC PowerStor Solar range use GEL maintenance free technology to enhance the deep cycling performance and provide a robust design that meets the demands of solar applications. Providing benefits when operating at high and low temperatures, having the capability to withstand unpredictable charging with daily cycling.



## SOLAR SERVICES

BPC can offer tailored design, manufacture, installation, commissioning, maintenance and training services for panels, inverters and cycling standby battery systems. Full site reviews and testing services, ranging from visual inspections to electrical tests are available to protect and maximise your solar PV investment. Appropriate maintenance can identify performance issues and potential equipment failures before they become a problem.





# Accessories

## Extensive range of accessories to accompany the BPC product portfolio

### EXTERNAL MAINTENANCE BYPASS

All BPC UPS are equipped with an Internal Static Switch allowing for instantaneous transfer to mains reserve supply when the power demand of the load exceeds the overload level of the inverter or a short circuit is experienced.

However, an optional External Manual Bypass Switch facility may be provided to offer the opportunity to do commissioning, routine maintenance, repair or removal of the equipment without any interruption to the critical load. Both make-before-break (MBB) and break-before-make (BBM) bypass switch designs are available.

A comprehensive range of bypass switches which are built to the highest standard using proven components are available in both single and three phase with variations for dual input supplies or parallel redundant configurations. Bypass switches can be customised and tailored to suit specific requirements for either UPS, Static Inverters or DC systems including the integration of output distribution boards, Castell interlock systems or auxiliary contacts within the same enclosure.



### EXTERNAL RACKMOUNT MAINTENANCE BYPASS

#### Suitable for 1kVA – 3kVA models

- Provides continuous power to connected equipment during UPS maintenance
- Easy operation with simple rotary switch and indications
- Adjustable master-slave function
- Large number of sockets for extended usage
- Rack and tower designs to fit into a diverse working environment
- Simple plug-and-play connectivity
- Diverse socket selections: IEC, UK, Schuko and NEMA



#### Suitable for PowerGem Pro 6kVA & 10kVA models

- Easy operation with simple rotary switch and indications
- 100% make-before-break to provide continuous power to connected equipment during UPS maintenance
- Automatic UPS protection design – auto transfer UPS to bypass when opening the maintenance bypass switch panel
- Easy operation with simple rotary switch
- Terminal block type



## RAIL KITS

Rail kits are available for all rackmount UPS, a simple kit to ease installation into 19" cabinets and will allow the UPS, to be supported without the requirement of a shelf.



## RELAY CARDS

Relay communication cards provide contact closures for the remote monitoring of the UPS system. The dry-port interface card provides a selection of dry-contact relays. The dry-contact signals monitor select parameters of the UPS such as, UPS failure, bypass active, low battery, UPS on and utility failure.



The dry-ports will then change their status depending on this alarm.

## SWITCHGEAR & CHANGEVER PANELS

Every switchboard is individually designed to suit our clients requirements including:

- Forms of separation: Form 2 to 4, type 1 to 7
- Ratings: 100A to 6300A
- Type tested assemblies (IEC 61439-1)
- Board access: Front and rear
- Cable entries: Top and bottom, entry or exit
- Mains, gen-man, auto changeover controls
- Electrical or mechanical interlocking
- Restricted or unrestricted earth fault
- Power factor correction (switchboard or stand alone)
- Surge protection



## BATTERY ACCESSORIES

BPC offer a comprehensive range of battery accessories which include open steel battery stands and cladded enclosed battery racks that can easily be assembled or disassembled, also including complete battery cabinet system options. These have been designed both technically and aesthetically as an integral part of the equipment system, forming a single unit which can be easily located without the need for special site considerations.

Other accessories include insulated battery shrouds, cable kits, DC switchable fuses and DC circuit breakers.

BPC also offer battery testing accessories for voltage and impedance testing along with insulated battery tools to simplify safe battery maintenance.



## REMOTE MONITORING PANEL

All PowerPro ranges of UPS Systems can be connected to a Remote Monitoring Panel (RMP) that allows the possibility to monitor different parameters from the control panel of the UPS System.

More than one RMP can be connected together in cascade for monitoring your UPS System from several different locations at the same time. The normal distance for locating a RMP in its standard format is 20m from the UPS, however longer distances can be achieved using the optional RS485 converter.



## BPC Service & Support

### Service, Maintenance, Rental & Training



**Keep the Power on**

Choosing the right backup power supply can be a long and costly process, but once you have found a suitable system, longevity is essential.

The investment made to ensure your critical equipment is supported does not stop at installation. A reliable and efficient UPS or Static Inverter is only the start to ensure you gain full expected life from your power supply, regular maintenance is vital.

BPC's commitment is to achieve the highest levels of customer satisfaction by providing real solutions that work reliably and meet your specific needs. All BPC products are backed by a superb after sales service providing comprehensive emergency breakdown and spares support.

BPC's devotion is reflected in the enduring quality of its products and is matched by an equally lasting commitment to customer care.



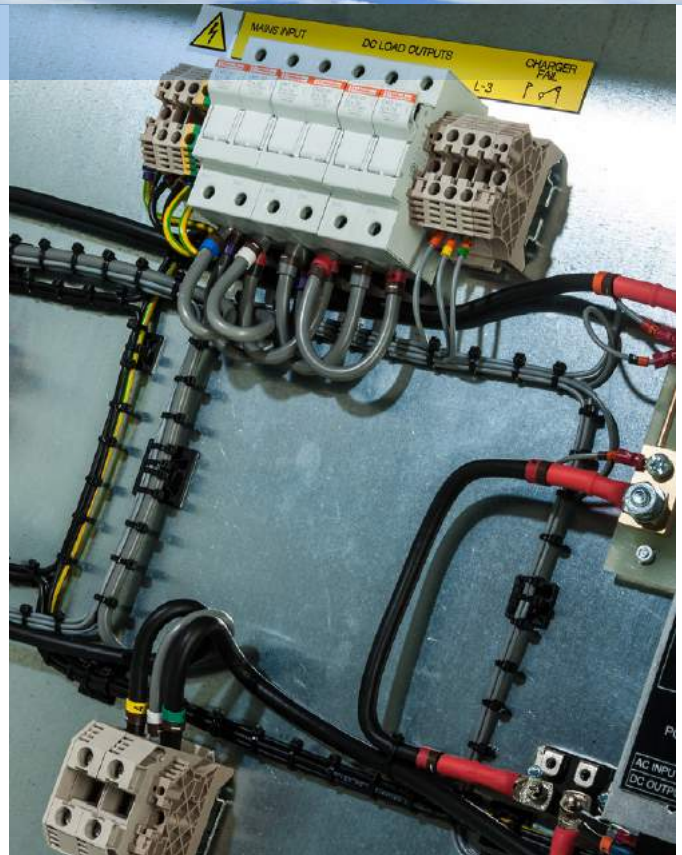
## Why Choose BPC?

### ENGINEER EXPERTISE

BPC have some of the most able and talented power protection engineers in the business. A wide span of industry experience backed by an extensive knowledge on the latest technologies allows BPC to offer a high level of service on not only BPC products but also third party equipment.

### APPROVALS & ACCREDITATIONS

BPC's high level of service is backed by the approval and accreditations attained. Certified in ISO9001:2015 quality procedures, certification, Contractors Health and Safety Assessment Scheme (CHAS), Safe Contractor, Constructionline and RISQS approved, showing health & safety principles.



## Pre-Sales Support

### SYSTEM DESIGN

BPC are able to offer system design to meet with all your exact requirements regardless of the size or complexity of your application. They can tailor a solution to suit both your commercial and technical requirements by utilising either modified commercially off the shelf products or custom built as a bespoke design.

### SITE SURVEYS

Carried out by a BPC engineer or a BPC approved installation engineer, a Site Survey will provide all of the information on the work necessary for the installation of the UPS. This can include all site preparation, remedial building work and the provision of air conditioning in addition to electrical services.

Post sales, this service is provided to ensure all aspects are inspected and noted to ensure smooth and efficient off load and positioning of the equipment is carried out.

### FACTORY ACCEPTANCE TESTING (FAT)

BPC have the facilities to offer Factory Acceptance Testing (FAT), a requirement often specified during the tendering process to help verify that the supplied product has been manufactured and operates in accordance with the systems required standards.

### HEALTH CHECKS

It is extremely important to carry out regular checks on your UPS & Battery Systems to ensure you have complete protection at all times.

BPC can carry out a general health check on your current UPS and battery installations and the inspection is designed to be none intrusive and pose no risk to the protected loads.

The engineer will carry out visual checks on the UPS, examine and record all measured parameters such as:

- Input voltages
- Input currents
- Output voltages
- Output currents
- Output frequency
- Percentage load
- Battery voltage
- Charge current
- Internal temperature

Alarm logs will also be inspected and recorded and batteries will be checked for cracking, swelling, signs of leakage, overheating etc.

On completion of the inspection, BPC will advise the customer of any immediate concerns and a full report will be provided.



## After Sales Support

### DELIVERY OFFLOAD POSITIONING

Delivery requirements can vary from straight-forward ground-floor flat easy-access to the most challenging of locations. BPC have the tools and experience to offer solutions for those awkward, heavy and difficult lifting scenarios. Offering bespoke solutions for larger projects such as relocations, complete dismantling of large machinery, custom transportation of goods and specialisms in the delivery & removal of hazardous waste.

### INSTALLATION & COMMISSIONING

All BPC installations are carried out by approved engineers who are experts in the installation of UPS and related equipment. If required, BPC can provide a managed turnkey service which provides for delivery to site and all associated installation electrical and building work. All BPC installations are compliant with current regulations and full certification will be issued on completion.

BPC are able to meet with all your exact requirements regardless of the size or complexity of your application. A solution can be tailored to suit both your commercial and technical requirements by utilising either modified commercially off the shelf (COTS) products or custom built as a bespoke product.

BPC have a dedicated team of managers and engineers who can provide a total solution from surveying your site through to complete commissioning of the system.

It is vital that your UPS or Static Inverter is fully commissioned to ensure it is installed and running correctly. Commissioning by a trained engineer will check the performance of the system whilst also checking the environment is suitable to achieve maximum service life.



### SITE ACCEPTANCE TESTING (SAT)

Site acceptance testing is essential to determine the functionality of the equipment at the user site before its final handover. Full operational testing of the system is performed in front of the client to validate the final installation of the equipment and its associated infrastructure.

### MAINTENANCE & SERVICE PLANS

Any power protection equipment is an investment for any sized company and having the reassurance that your equipment is maintained to ensure full life expectancy is key.

BPC can offer a range of maintenance agreements all with 24 hour telephone support. Agreements vary in price depending on the level of support and response time required. Options from next working day to 4 clock hour responses are available nationwide. BPC can be very flexible to suit customer requirements whether it is an additional annual visit or strategic spare part requirements.

With the knowledge and experience to support third party equipment it is now even easier to choose BPC as your service provider, allowing us to support all your equipment at site regardless of quantity, size, make or model, ensuring a high level of support and one single point of contact.

### HAZARDOUS WASTE DISPOSAL

Due to tight regulations within England and Wales on the transport of batteries that are at the end of their life, BPC Energy are fully equipped to offer complete removal and replacement services. BPC are registered upper tier waste carriers for the safe transportation of batteries with the Environment Agency in England & Wales. Registration No. CB2U66604

## RENTAL OPTIONS

**BPC have launched a UPS rental scheme for those specific requirements where mains supply power backup is required for limited periods of time.**

A range of the latest technology UPS, from 6kVA up to 80kVA, including modular redundant systems are kept in immediate readiness to be delivered to site to suit a variety of eventualities such as relocation, planned maintenance or emergencies.

Various battery backup times are also available ranging from nominal 10 minutes to several hours. Rental can be as short as one month or as long as required, with special reductions for longer periods, and include commissioning and decommissioning of the units. If required, installation and battery assembly can also be arranged.

As you would expect from a company with BPC's reputation for service and support, all the rental UPS systems are backed by an inclusive next working day fully comprehensive support plan, which can be enhanced to 4 or 8 hour response times.

Rental services may be required during the following circumstances:

- Temporary situations, during exhibitions, seminars, road shows or refurbishments
- During planned power interruptions, when building work is taking place
- While an upgrade is planned and the load is increased
- May be more suitable to hire than purchase at the time
- Mission-critical activity is occurring
- During the start up period of your new business
- To see whether a long-term investment of a UPS would be appropriate for your business

*International Training Course in Kenya*



## TRAINING COURSES

BPC offers fully flexible training courses to suit any specific requirement of our customers. Our quality training courses are led by highly experienced and knowledgeable BPC engineers available to answer any query and offer full technical assistance and guidance throughout.

Courses are generally held at our comprehensive headquarters in the UK offering a mixture of both classroom and workshop facilities in order to allow for all aspects of theory and practical training. However, as the BPC Group is an international company with offices and distributors across the world, we can offer fully tailored courses to take place around the globe.

The courses can last anywhere between one day to a week depending on the course content, and on successful

completion of the course a certificate will be awarded to each participant certifying proficiency.

BPC can also offer free technical seminars, independently certified by the Chartered Institute of Building Service Engineers to conform to CPD guidelines, ideally suited for consultants and electrical engineers. Offered anywhere across the UK, a specialist trainer can visit your site for a 1 hour seminar to cover topics including UPS fundamentals, UPS topologies, UPS maintenance and battery management.



# BPC Virtual Service

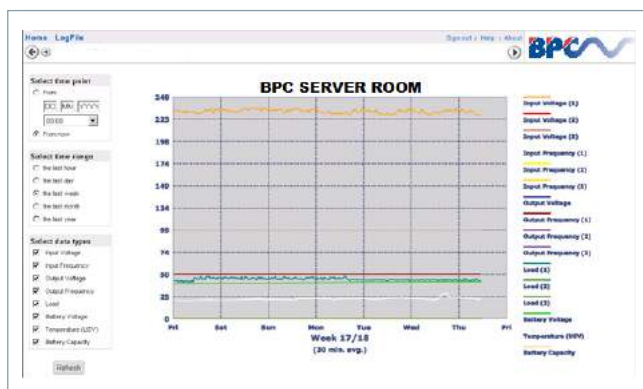
## 24/7 Remote Monitoring Solution

BPC Virtual Service continuously communicates with a BPC UPS or Static Inverter to provide a 24/7 monitoring solution anywhere in the world. All communication transfers to the UK based control centre where the data is analysed by experienced and qualified BPC engineers.

If an anomaly or fault should occur, the BPC controller will investigate and determine what action should be taken. The controller will mobilise an engineer or make contact with a local based service partner and provide all necessary details to report direct to the customer.

Virtual Service provides the highest customer security by ensuring one way communication with the site. The power device requires only a BPCVS-SNMP card connected directly to the local network to allow monitoring.

All of the Virtual Service communication to the BPC Control Centre is transmitted purely by email as the SNMP card sends an email package of data every 10-16 minutes. This secure connection is completely controlled via the site and removes BPC from any access to secure data.



The Virtual Service system has the ability to monitor multiple Power Devices:

- UPS Systems
- Static Inverters
- Batteries
- Static Transfer Switches
- Generators
- Environmental Sensors
- DC Systems

### Key Benefits:

- 24 hour continuous monitoring and management of your power device
- Business critical loads protected by dedicated and highly skilled personnel
- Prevention and early detection before fault occurs
- Ideal for mission critical systems and unmanned sites
- Annual reports provide in depth details of readings and events

### REPORTING

Depending on the level of Virtual Service required, annual or monthly reports are provided which detail the captured readings and events. BPC Virtual Service can capture the following data:

- Input Voltage
- Input Frequency
- Battery Voltage
- Battery Temperature
- Battery Capacity
- Autonomy Time
- Load Percentage
- Output Voltage

### ALERTS

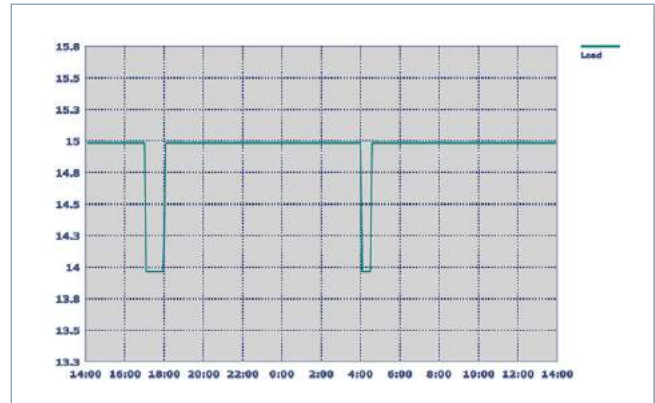
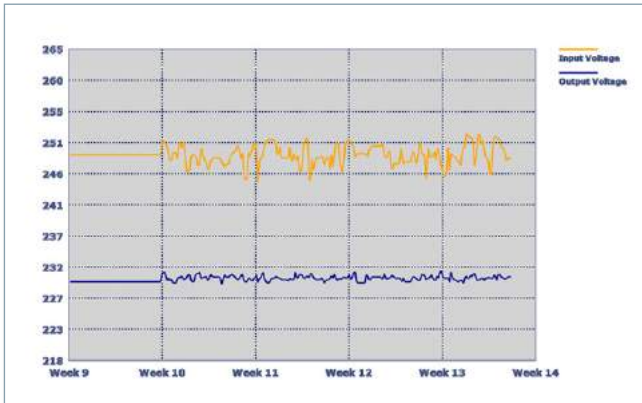
The email transfer system is called the Power Heart-Beat. The virtual service control centre is continuously monitoring the steady pulse being sent by the power device. If the power device heart-beat stalls or stops, the BPC controller is made aware and contacts the necessary party to investigate.

### COMPLETE SERVICE PACKAGE

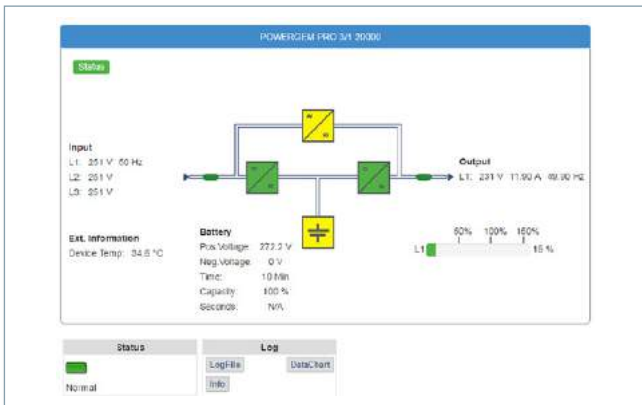
BPC Virtual Service works in tandem with your existing service contract and Battery Analysis and Care System (BACS), improving service levels and mean time to repair, by allowing the engineer to arrive on site with the correct equipment and spares.



## Example screenshots of BPC Virtual Service.



Various parameters can be measured and analysed over user set time periods.



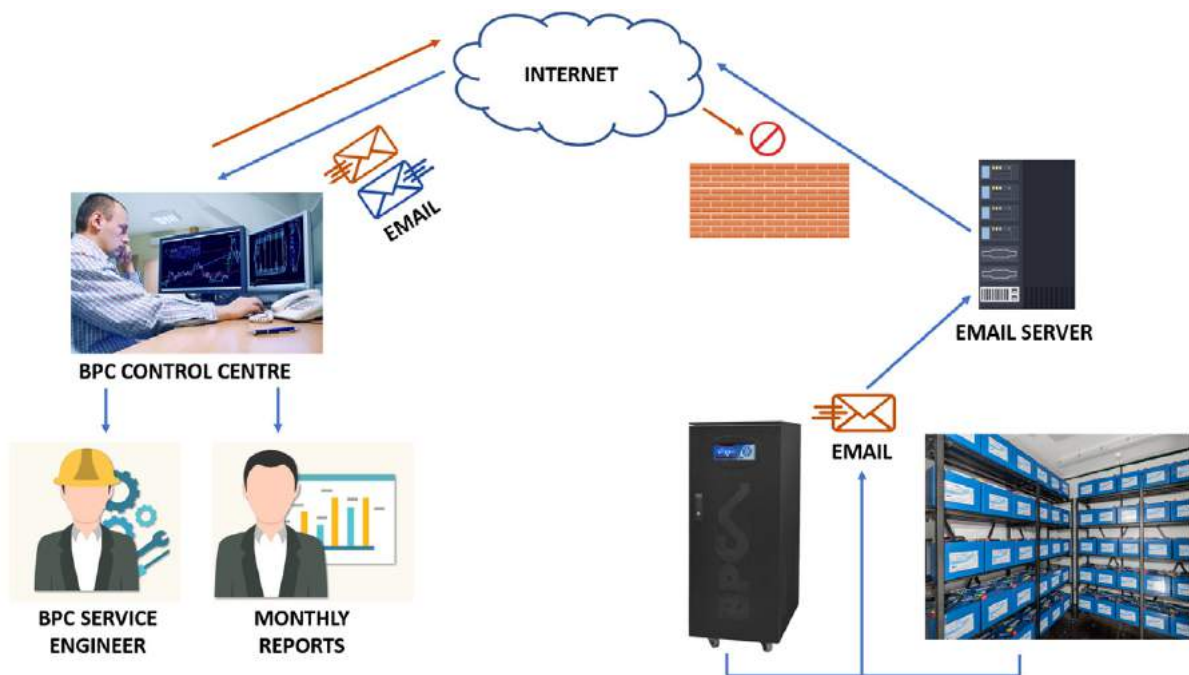
BACS Module Status

- BACS Alarm: Serial Communication Lost
- BACS Warning: Temperature High
- BACS Status: Charging

Battery 1				Battery 2				Battery 3				Battery 4			
No.	Volt	Temp	Status	No.	Volt	Temp	Status	No.	Volt	Temp	Status	No.	Volt	Temp	Status
1	13.41	33.0	OK	31	13.40	24.0	OK	61	13.40	33.0	OK	91	13.47	24.0	OK
2	13.41	24.8	OK	32	13.40	24.0	OK	62	13.40	33.0	OK	92	13.47	23.7	OK
3	13.41	24.2	OK	33	13.40	24.0	OK	63	13.40	33.0	OK	93	13.47	24.0	OK
4	13.41	24.3	OK	34	13.40	22.0	OK	64	13.40	33.0	OK	94	13.47	24.4	OK
5	13.41	24.1	OK	35	13.40	24.0	OK	65	13.40	33.0	OK	95	13.48	24.0	OK
6	13.41	24.2	OK	36	13.40	25.0	OK	66	13.40	33.0	OK	96	13.47	23.5	OK
7	13.41	23.1	OK	37	13.40	25.0	OK	67	13.40	33.0	OK	97	13.47	24.0	OK
8	13.41	23.8	OK	38	13.40	25.0	OK	68	13.40	33.0	OK	98	13.47	24.0	OK
9	13.41	23.0	OK	39	13.40	24.0	OK	69	13.40	33.0	OK	99	13.47	24.0	OK
10	13.41	24.2	OK	40	13.40	25.0	OK	70	13.40	33.0	OK	100	13.47	24.0	OK
11	13.41	24.3	OK	41	13.40	24.0	OK	71	13.40	33.0	OK	101	13.47	23.0	OK
12	13.41	24.8	OK	42	13.40	25.0	OK	72	13.40	33.0	OK	102	13.47	23.0	OK
13	13.41	24.8	OK	43	13.40	25.0	OK	73	13.40	33.0	OK	103	13.47	24.0	OK
14	13.41	24.7	OK	44	13.40	24.0	OK	74	13.40	33.0	OK	104	13.47	23.0	OK
15	13.41	24.0	OK	45	13.40	25.0	OK	75	13.40	33.0	OK	105	13.47	24.0	OK
16	13.41	23.8	OK	46	13.40	25.0	OK	76	13.40	33.0	OK	106	13.48	24.0	OK
17	13.41	23.8	OK	47	13.40	25.0	OK	77	13.40	33.0	OK	107	13.48	24.0	OK
18	13.41	23.6	OK	48	13.40	24.0	OK	78	13.40	33.0	OK	108	13.48	24.0	OK

Virtual Service Site Viewer.

Virtual Service monitoring a rack of batteries using the BPC BACS system. This image shows an alarm on high temperature batteries.

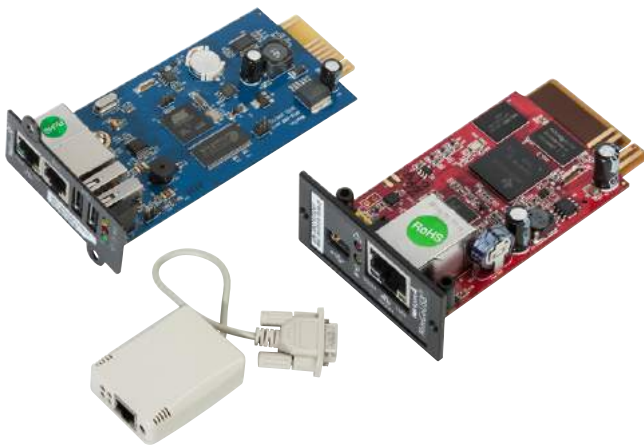




# Networking Intelligent Power Management

## SIMPLE NETWORKING MANAGEMENT PROTOCOL (SNMP) CARDS AND ADAPTORS

SNMP cards are used for the management of UPS systems via a computer or local network. With a web based programme built into the SNMP, simply connecting the card to a network via its LAN port allows for easy monitoring of the UPS. SNMP cards can be used not only to monitor UPS parameters, but also allow user controlled testing, email alerts and sending of remote console commands to client systems to initiate automatic shutdowns. SNMP cards can be fitted internally on some UPS models or externally fitted via the UPS RS232 port.



## ENVIRONMENTAL MONITORING

BPC can provide enhanced environmental monitoring using the NetFeeler 2 alongside your SNMP card. It can detect variations in temperature, humidity and presence of water as standard, with optional add-ons as listed below:

- **Wireless smoke sensor**
- **Wireless gas sensor**
- **Wireless door / window sensor**
- **Wireless glass-break sensor**
- **Wireless infrared sensor**
- **Wireless PIR sensor**
- **Flashlight**

When an event occurs, the NetFeeler 2 alarm will buzz and can be configured to simultaneously send an email through the SNMP card. When connected to an SNMP Card it can provide environmental status feedback via the internet using a standard browser and can support up to 7 individual ID/sensors.

## PORT MULTIPLEXER

Allows two devices to be connected to a single RS232 serial communication port on a UPS. It can be used when a separate Intelligent Power Management interface and Remote Monitoring Panel are both required.

## MODBUS ADAPTORS

BPC have a wide range of MODBUS/BUS adaptors that support RS485 and TCP/IP connectivity to ensure the device provides continuous, reliable and accurate network monitoring of the UPS system through a Building Management System (BMS).

## RS485 CONVERTER

Using a BPC RSC 24 you are able to convert the RS232 interface to RS485. Should be used if the distance between UPS and its receiving interface exceeds 20 metres.

## CUSTOMISED INTERFACES

With a Multi-interface slot, various communication combinations are selectable including additional RS232, Relay Cards, USB, Dry-Contact Relays and customised packages.

## GSM MODEM

When connected to advanced SNMP cards the GSM MODEM can send SMS alerts via a telephone sim card.



## UK manufacture & design guarantee

### UK MANUFACTURING & DESIGN

The BPC Energy manufacturing group, incorporated in 1996 based in Romsey Hampshire, is known as a flexible specialist in power protection and brings answers to all your needs. BPC are an international company manufacturing globally in the UK, China and Turkey.



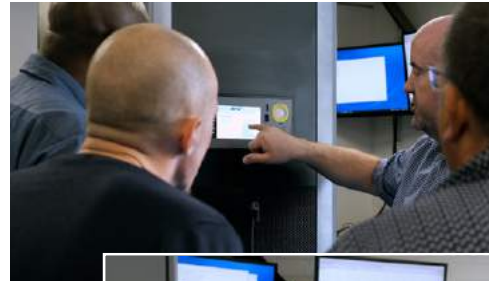
**MADE IN  
UNITED KINGDOM**

### UK MANUFACTURING & DESIGN

Based in the UK manufacturing facility in Romsey is also the R&D test facility.

We provide the normal Factory Acceptance Testing (FAT) options but also testing facilities for medical equipment to ensure power protection capabilities.

Reliability and safety are vitally important so we ensure both equipment and applications are thoroughly tested with the client prior to delivery to minimise any risk of failure at site.



## The BPC Group

BPC is an international company operating for over 25 years globally, with partners and distributors located around the world.

These regions include:

### EUROPE

UK, France, Germany, Gibraltar, Ireland, Netherlands, Malta, Norway, Portugal, Russia.

### MIDDLE EAST

Bahrain, Georgia, Iraq, Jordan, Kuwait, KSA, Lebanon, Oman, Qatar, Syria, Turkey, UAE, Yemen.

### AFRICA

Algeria, Botswana, Burkina Faso, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Kenya, Libya, Mozambique, Nigeria, Rwanda, Sierra Leone, South Africa, Sudan, Tanzania, Uganda, Zambia.

### FAR EAST & ASIA

India, Pakistan, Sri Lanka, Indonesia.

To ensure a high level of pre and post sales support is offered, BPC work closely with distributors, providing key commercial and technical training whilst providing competitive costing structures tailored to specific region markets, ensuring the most suitable BPC products are offered. We pride ourselves on long standing relationships with our partners which is reflected in the ongoing support provided locally.



THE BRITISH POWER CONVERSION COMPANY™

Authorised Distributor



## Mega Projects – Reference List

- Gibraltar Gaming & Commercial Sectors
- Queen Elizabeth Olympic Park, London
- Moorcroft Group Debt Recovery, Stockport, Cheshire, UK
- NITC Data Centre, Jordan
- Tottenham Hotspur Football Stadium, London
- Co-operative Headquarters, Manchester, UK
- NHS Broomfield Hospital, Essex, UK
- Eden Project, Cornwall, UK
- The Royal Infirmary of Edinburgh, Scotland
- Broadmoor Secure Prison Hospital, Berkshire, UK
- Al Maktoum Stadium, Dubai
- Cairo International Airport Terminal 3
- Doha Tram System, Qatar
- Public Procurement and Property Disposal Service Contracts, Ethiopia
- New Jahra Hospital, Kuwait
- Park Plaza Hotel Complex, London



Tottenham Hotspur Football Stadium, London



Eden Project, Cornwall, UK



Queen Elizabeth Olympic Park, London

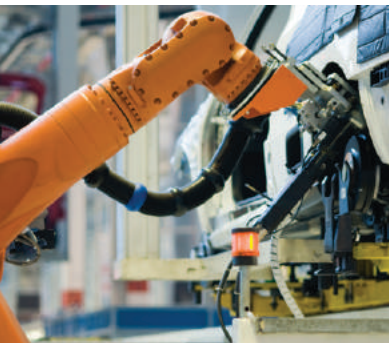


Al Maktoum Stadium, Dubai

For further reference sites, please visit our website: [www.bpc-ups.com](http://www.bpc-ups.com)







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