



EMERGENCY LIGHTING 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.

Over the past 27 years 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 9001–2008 For design, assembly, commissioning, testing and servicing

Solutions to meet all Emergency Lighting Applications

The PowerPro EL ranges are Static Inverter Systems designed specifically for emergency lighting applications according to European BS EN50171, EN50272, 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 normally 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.

Typical Applications

- » **Escape Route Lighting**
- » **Open Area Lighting**
- » **Sporting Grounds and Stadiums**
- » **Railway Stations**
- » **Ministry of Defence**
- » **Industrial Applications**
- » **Distribution Centres**
- » **Theatres**
- » **Cinemas**
- » **Public Buildings**
- » **Civil Buildings**



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.



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.

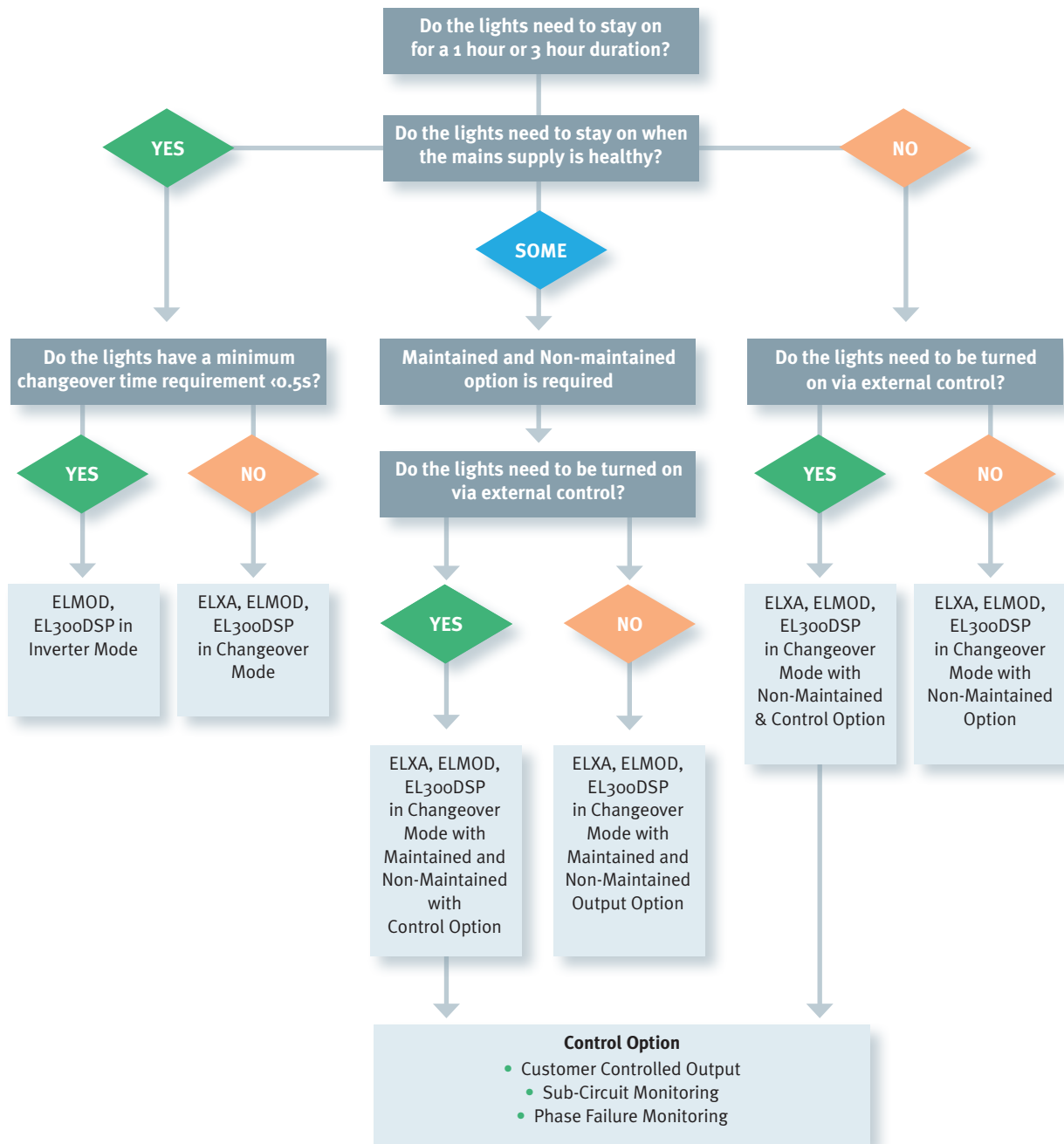


EL300DSP Features

- 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 key 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.

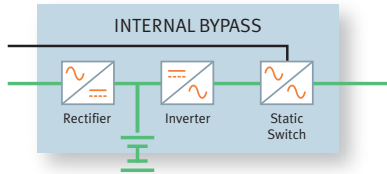


PowerPro EL System Operation Descriptions

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

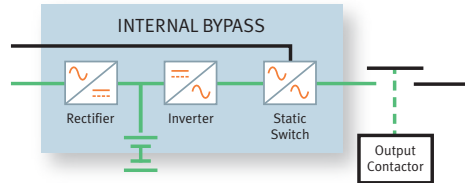
MAINTAINED OUTPUT

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



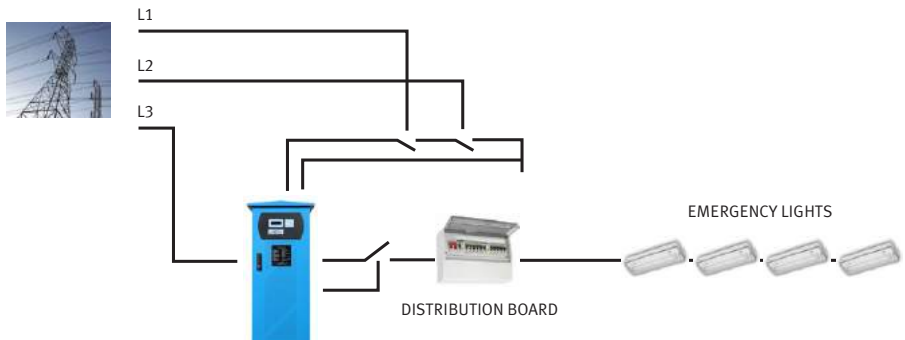
NON-MAINTAINED OUTPUT

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.



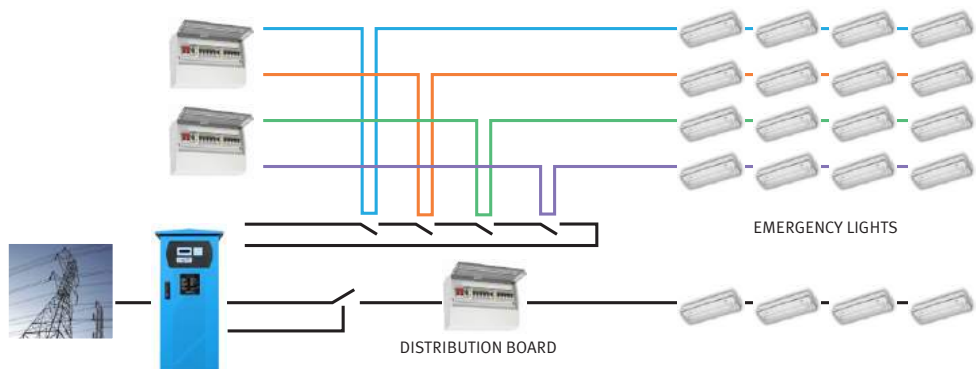
PHASE FAILURE MONITORING

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



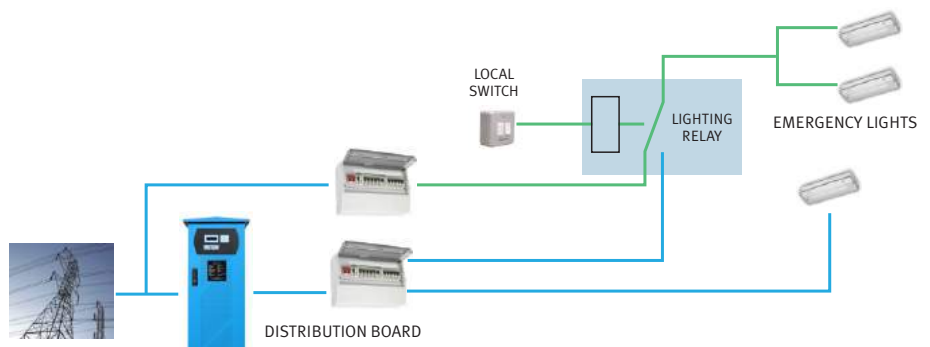
SUB-CIRCUIT MONITORING

- 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 EL100 XA Single Phase Input & Output Static Inverter

Technical Specification



MODEL	EL 1005XA	EL 1012XA	EL 1030XA
Power Rating VA / Watts	500 / 400	1250 / 1000	3000 / 2400
INPUT			
Nominal Voltage	230 Vac (1Ph + N + PE)		
Voltage Range	184 V – 285 V		
Frequency Range	50 Hz ±5%		
OUTPUT			
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)		
BATTERY			
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		
LIGHTING CONTROL INTERFACE			
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		
GENERAL			
Operating Temperature	0°C - 40°C / <1000m above sea level		
Operating Humidity	5 - 95% non-condensing		
Acoustic Noise	≤56 dB @ 1metre		
Protection Degree	IP20		
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	EL MOD/4	EL MOD/8	EL MOD/12	EL MOD/16	EL MOD/20	EL MOD/24
Power Rating kVA / kW	4 / 3.6	8 / 7.2	12 / 10.8	16 / 14.4	20 / 18	24 / 21.6
INPUT						
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)		
Voltage Range	±25%					
Frequency Range	50 Hz ±10%, 60 Hz ±10%					
OUTPUT						
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)	<1%					
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)					
BATTERY						
Battery Type	VRLA AGM Maintenance 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					
LIGHTING CONTROL INTERFACE						
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					
GENERAL						
Operating Temperature	-5°C to 40°C / <1000m above sea level					
Operating Humidity	≤93% non-condensing					
Acoustic Noise	≤55 dB @ 1 metre					
Protection Degree	IP20					
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	
INPUT										
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%									
OUTPUT										
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)	<3%									
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)									
BATTERY										
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									
LIGHTING CONTROL INTERFACE										
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									
GENERAL										
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	IP21									
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

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

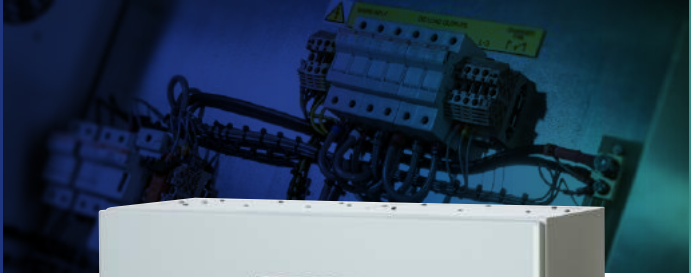


15x Static Inverters and UPS Systems at the National Velodrome Stadium, Olympic Village



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

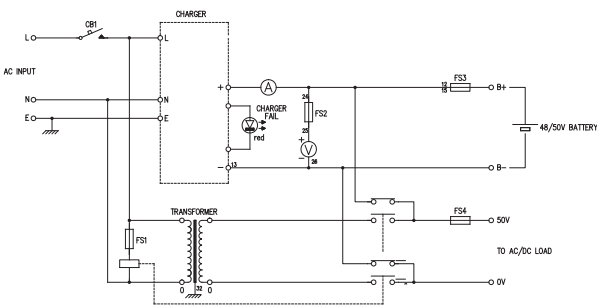
Any battery autonomy can be catered for, this will often be designed as a self-contained battery, housed in the base of the CBU. However, depending on runtime requirements, an external battery cabinet or open steel manufactured racks will be provided. Valve Regulated Sealed Lead Acid Maintenance Free 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.

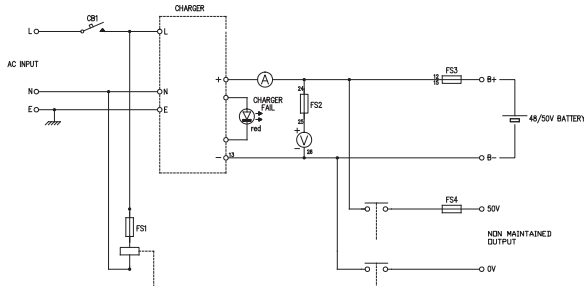
MAINTAINED

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

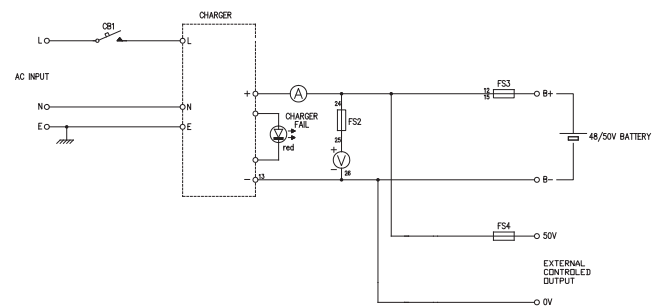
A Non-Maintained CBU will provide a DC supply in the event of a mains power failure at the CBU Input.



- » 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.



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 Energy'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.



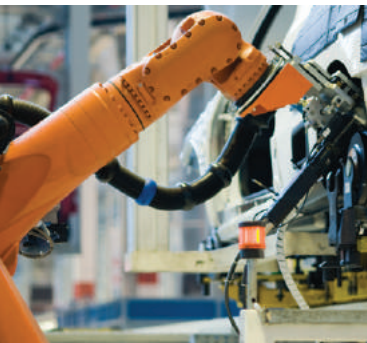
Our Training

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 Energy's 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 Energy 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.





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