

Powervamp®

ADVANCED POWER SOLUTIONS

Emergency Lighting Central Battery Systems

effekta
RANGE



Emergency Lighting Central Battery Systems



ESSENTIAL, INSTANT, RELIABLE POWER

Emergency lighting plays an essential role in all public buildings and workspaces.

In the event of a power failure, the emergency lighting central battery system switches over to battery power. Not only must the lighting be restored seamlessly, but the emergency system must also be able to maintain an acceptable lux level (brightness) for long enough to allow people to leave the premises safely. In most cases this is likely to be either one hour or three hours.

Under UK law, there is an obligation for public buildings to be equipped with emergency lighting. Powervamp's Effekta Range of emergency lighting power systems are designed to fulfil these obligations reliably and efficiently.

SERVICE WITHOUT DISRUPTION

Like all life safety systems, the central battery system must be maintained periodically to ensure reliable operation in the event of emergency. Central battery maintenance is far less disruptive when compared with self-contained type installations (battery housed within the light fitting). This is an important consideration when designing emergency lighting systems for busy areas e.g. airports, shopping centres or areas where the light fittings are not easily accessible such as warehouses and industrial buildings.

Battery life is extended with central battery systems due to the use of 10-year life maintenance-free batteries, which reduces the cost and frequency of battery replacement.

Powervamp systems are manufactured in the UK and supported by our factory trained engineers.

Effekta systems in high-risk task areas

For areas which are considered high risk, the required light levels are significantly higher than for general emergency lighting. This is difficult to achieve using self-contained light fittings as the light output is reduced when in battery mode (power failure).

An Effekta central battery system will maintain light levels at maximum brightness during a mains failure, reducing the number of fittings required for these areas.

Effekta systems and ATEX

Emergency lighting is a requirement in areas where there is a high risk of explosion. ATEX approved self-contained fittings are expensive and, if used in areas with high ceilings, often will not produce the lighting levels required. In this scenario, standard ATEX fittings can be used with an Effekta central battery system installed in a plantroom outside of the ATEX area.

Effekta systems and LED lighting

LED light fittings are increasingly being used in new-build as well as refurbish projects. The main reason for this is efficiency – LEDs provide a much higher light output than traditional lighting – and this means less power consumed for the same brightness level. This reduction in power makes central battery type systems more cost effective as the number of light fittings for the same power rating increases dramatically.

Effekta central battery systems are well suited to LED installations as there is often no space for local battery packs, which are typically pushed through the ceiling cavity. This makes maintenance of these types of fittings awkward as lamps need to be removed to gain access to the battery pack.

Powervamp have installed many systems powering LED lighting and can therefore assist with system ratings and other considerations (including poor power factors, high harmonics, and high inrush currents) that are sometimes associated with poor quality LED fittings.

Effekta systems and interior design

When using an Effekta central battery system, architects and designers have the freedom to choose light fittings (modern or period type) to suit the aesthetics of a particular room or area within the building.

Effekta systems and exterior lighting

Occasionally exterior emergency lighting away from the main building is required, this could be due to a remote muster point or particular risk assessment that necessitates the need for external emergency lighting. Often this lighting will be in the form of street lighting where it is not possible to fit battery packs. Central battery systems are ideal for this sort of application as the system can be housed within the main building or adjacent plantroom.



WHERE ARE EMERGENCY LIGHTING CENTRAL BATTERY SYSTEMS USED?

AIRPORTS

ASSEMBLY PLANTS

CAR PARKS

CINEMAS

COLLEGES AND SCHOOLS

DISTRIBUTION CENTRES

FACTORIES

HISTORIC BUILDINGS

HOSPITALS

HOTELS

INDUSTRIAL BUILDINGS

LIBRARIES

OFFICE BLOCKS

RAILWAY STATIONS

SHOWROOMS

STADIUMS

SCHOOLS

SUPERMARKETS

TRAINING CENTRES

UNIVERSITIES

WAREHOUSES

AND HIGH-RISK TASK AREAS

The Effekta range

Powervamp's Effekta Range of emergency lighting power systems are typically supplied with AC (alternating current) output, this type of central battery system is often referred to a static inverter. Powervamp also offer systems with DC (direct current) output for legacy system replacement.

THE RANGE INCLUDES

- EF 5 ELI range Single Phase 150 - 1500 VA
- EF 20 ELI Single Phase 1.5 - 30.0 kVA
- EF 33 ELI range Three Phase 5.0 - 100.0 kVA
- EF 20 CBS range AC/DC 1.5 - 10 kVA central battery system

COMPLEMENTARY PRODUCTS

- Changeover relays
- Hold off relays
- Sub-circuit monitoring
- Battery monitoring



EF 5 ELI range SINGLE PHASE 150 - 1500 VA

The **Effekta EF 5 ELI** performs automatic load tests of the luminaires by monitoring the current they draw. There is no requirement for additional control wiring making the EF5 system a very cost-effective alternative to a fully addressable installation.

Ratings start at 150VA increasing to 1500VA and can be used with standard mains light fittings. Four fused load paths with earth leakage detection can be monitored giving the user defined areas in which to easily locate faulty luminaires. Load flexibility allows any one load line to be maintained, non-maintained or switched.

Features

- Automatic load monitoring
- Integral 4-way fused distribution
- Output earth leakage detection
- Comprehensive digital display
- Compact design with wall or floor mount enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 3 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use
- Optional Integral 12-way fused distribution



EF 5 ELI (1500VA) and EF20 ELI (3kVA) installations at the National Museum of Scotland, Edinburgh



EF5 ELI x 44 (600VA) installations at Waterloo Station, London



EF 20 ELI range

SINGLE PHASE 1.5 - 30.0 KVA

EF 33 ELI range

THREE PHASE 5.0 - 100.0 KVA

The **Effekta EF 20 ELI** offers single or optional three-phase input with single-phase output.

The **Effekta EF 33 ELI** offers three-phase input with true three-phase output.

Systems can be configured as either passive or active standby and with contactor or static switch changeover (suitable for discharge lamps). In addition, high fault clearance can be achieved by configuring the output stage to suit the required fault current. With smaller systems, the batteries are housed within the system enclosure with separate battery enclosures or cladded battery stands for larger systems.

Features

- Comprehensive digital display with data logger storing up to 200 events
- Compact floor standing enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 4 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional internal distribution
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use
- Optional three-phase input (EF 20 ELI range)

EF 20 CBS range

SINGLE PHASE 1.5 - 10 KVA (AC/DC)

The **Effekta EF 20 CBS** is a product designed to replace legacy central battery systems which typically require output voltages of 50, 110 or 220 volts. This type of system provides AC during mains operation, reverting to DC during mains failure. With smaller systems, the batteries are housed within the system enclosure with separate battery enclosures for larger systems.

Features

- Comprehensive digital display with data logger storing up to 200 events
- Compact floor standing enclosure
- Deep discharge protection for batteries
- Reverse battery polarity protection
- 4 x volt free contacts for remote monitoring or BMS
- 10-year design life batteries with ageing factor
- Battery temperature compensation
- Modular front access design for reliability and serviceability
- Fully compliant with BS EN 50171
- Optional internal double pole fused distribution
- Optional phase failure relay
- Optional LAN connection for remote monitoring
- Optional high IP ratings for outdoor use



EF 33 ELI (120kVA) installation at Anfield Stadium, Liverpool



EF5 x 4 (300VA - 600VA) installations at Winchester Cathedral

Services

Consultation, service and maintenance agreements

Powervamp offers advice on emergency lighting installation, and can provide essential ongoing maintenance support over the life of the system - whether it is our Effekta Range system or that of another manufacturer.



POWERVAMP'S CENTRAL EMERGENCY LIGHTING SYSTEMS SERVICES INCLUDE:

SITE SURVEY

Often site surveys are required to ensure the correct solutions are identified. Our engineers can carry out free of charge surveys and provide in-depth technical advice on Powervamp products ensuring the best possible solution for your requirement.

Our site survey covers all aspects from deciding which system best suits the application to the practical elements including delivery, installation and commissioning requirements.

- Understand client's requirements
- Assess existing installation
- Power monitoring/energy saving
- Compliance with current legislation
- Space/environmental consideration
- Delivery access requirements

COMMISSIONING

Commissioning is the final and arguably the most important step in completing the installation of your Powervamp system. Powervamp engineers are factory trained to commission emergency lighting central battery systems, static inverter systems, static frequency converters and ground power units.

Comprehensive checks are carried out to ensure your Powervamp system is

installed correctly and operates in accordance with relevant safety and performance standards. Our SafeContractor approved service department can assist with site handovers, training and guidance as part of commissioning works.

- Risk assessments and method statements
- All engineers ECS or CSCS approved
- Airside and military clearances
- Full system test
- Loadbank test capability
- Full report/commissioning certificate

TURNKEY SOLUTIONS

Total peace of mind for your project. Turnkey solutions often make sense for our customers, from concept to completion, by your side every step of the way.

We understand our products and how best to install them. Our projects team are on hand to coordinate a multitude of internal resources as well as sub-contractors for logistics and installation, should the need arise.

- Site survey
- CAD layout and schematic drawings
- Project management
- Logistics
- Installation
- Final commissioning and testing

PRODUCT SUPPORT

Powervamp engineers supporting Powervamp products. As a British manufacturer we stand by our products offering cost-effective support and maintenance, ensuring your system's life-cycle is maximised.

We truly believe that the key to our success is working with our customers, creating a mutually beneficial partnership which will hopefully lead to repeat business in the long-term.

In today's competitive markets, manufacturers/resellers often sell equipment at low margins only to 'sting' their customers with extortionate maintenance costs. Powervamp adopts a more balanced approach and therefore we urge our potential customers to check through-life costs before making any final commitments to new/replacement systems.

- Maintenance agreements
- On-site support
- Telephone support
- Emergency callout facility
- Service centre
- International representation

Other power products

Powervamp's static frequency converters

Powervamp is a leading manufacturer of static frequency converters, providing reliable power for export manufacturers, aerospace and defence customers worldwide.

Electrical mains voltage and frequency vary widely from one country to another. This poses a problem – not only for businesses wanting to buy electrical equipment and machinery from abroad, but also for manufacturers needing to perform compliance testing on products destined for export or for aerospace/ defence sectors.

The Powervamp range of static frequency converters connect to the local electrical mains supply and through a double conversion process, output power at the desired voltage

and frequency. Devices they serve can be anything from domestic equipment to medical equipment, factory plant and machinery.

Our systems typically convert from either 50–60Hz for American markets/ equipment or 50–400Hz for aerospace/defence requirements. Voltage/frequency adjustment from the control panel is included as standard, ideal for compliance testing where there is often a requirement to check product performance within set tolerances.

Powervamp is a global leader in the provision of systems to aircraft manufacturers and operators for avionics work, and to defence contractors.



Powervamp's range of 28V and 400Hz power units



PV90-3 GPU
90KVA FIXED ELECTRICAL
POWER UNIT



PV45 GPU
45KVA FIXED OR MOBILE
ELECTRICAL POWER UNIT



COOLSPPOOL 410
28V DC BATTERY
RAMP CART



TRU 2400-2
28V DC TRANSFORMER
RECTIFIER UNIT

Programmable AC power supplies



EF 1 PPS RANGE Powervamp's AC programmable power supplies are designed for industrial product testing, avionics work and military applications. Adjustable voltage from 0-270V and frequency from 45-450Hz



Powervamp manufactures a range of professional automotive battery jump-starters suitable for use on the smallest petrol car to the largest commercial diesel engine

Powervamp

Specialists in aviation power

- PORTABLE DC GROUND POWER UNITS
- 400Hz ELECTRICAL GROUND POWER
- TRANSFORMER RECTIFIER UNITS
- AIRSHOW AND RENTAL SERVICES
- AIRPORT CABLE CARRIERS
- MINI-DIESEL GPU's
- POWER SUPPLIES
- DC RAMP CARTS



Specialists in emergency power

- CENTRAL BATTERY SYSTEMS
- FREQUENCY CONVERTERS
- EMERGENCY LIGHTING
- STATIC INVERTERS



Specialists in industrial power

- EXPORT MANUFACTURERS
- TEST HOUSES
- AEROSPACE
- MILITARY



Specialists in automotive power

- BATTERY JUMP-STARTERS
- SPECIALIST AUTOMOTIVE
- DRY-CELL BATTERIES
- POWER SUPPLIES
- DC CHARGERS
- INVERTERS



Powervamp and the Effekta Range

In 2011, Powervamp merged with Effekta UK Ltd, a company established in 1998 to manufacture its own central battery inverter systems, static frequency converters and bespoke uninterruptible power supplies.

Its initial highly successful EF20 single-phase frequency converter was soon augmented by the EF33, a three-phase product, and by a 90kVA 400Hz ground power unit (GPU).

Powervamp is internationally renowned for its frequency converters and aviation ground power systems, and is also a long-established UK-based specialist in portable engine starting systems for the automotive market.

The company continues to run its expanding frequency converter and emergency lighting system operations at the Barton-le-Clay facility.

Powervamp's programme of Greener Power promotes the use of recyclable materials and products within the aviation industry.



Batteries used within Powervamp's pioneering DC carts and GPUs are made from 99% pure lead. Entire packs are constructed on average from 97% recycled material.

Replacing rotary type frequency converters and diesel ground power units with Powervamp Solid State SFC & GPU technology makes a significant contribution to a greener business and airport environment. Reduced CO₂, reduced noise, reduced costs - the compelling reasons to choose Greener Power from Powervamp.

For further information on our Greener Power programme, please visit www.powervamp.com



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Unit B1-7
Barton Industrial Estate
Faldo Road
Barton Le Clay
MK45 4RP, England

Tel: +44 (0)1582 882332
Fax: +44 (0)1582 645825
Email: sales.barton@powervamp.com
www.powervamp.com



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