



Distribution



Protection



Transformers



Site Lighting

Experts in **high performance**  
power and lighting products

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Blakley Electrics designs and manufactures equipment for many military installations, including Aircraft Hangars, Naval Dockyards and a multitude of Field applications. Products support all of the UK armed services in such diverse sectors as Deployable Camps, Energy Management, Ship Refits, Aircraft Maintenance, Communications and Field Hospitals. We supply direct to the MOD or via a range of contractors. Although much of our range is classified as Commercial Off The Shelf (COTS), all products are specifically designed for military use.

### Field Power and Lighting

From a mighty 4000 amp Generator Interface Unit supplying a field hospital to a humble 13A distribution assembly supplying a laptop, we have a wide range of field power distribution equipment. We produce assemblies that are designed to operate with in-service FEPS, LFG and CAT generators, as well as in-service FEPDS and LAPDS power distribution systems. For maximum flexibility, many distribution assemblies are suitable for deployment with either distribution system.

### Aircraft Hangars

We design and manufacture a range of distribution and protection assemblies for use within military aircraft hangars, used in the servicing of fixed-wing and rotating wing aircraft. Products include single and multi-way 50Hz socket assemblies, protecting users in accordance with MOD Technical Bulletin TB 03/05 and combined assemblies providing isolated aircraft supplies at 200V 400Hz, 28V DC supplies for avionics and 50Hz supplies for Ground Support Equipment.

### Naval Dockyards

We manufacture Dockside Service Units, Cable Change Boxes, Crane Supply Points and Ship to Shore Sockets for use within Naval Dockyards, in the UK and overseas. Assemblies are often project specific but, due to the installation conditions, assemblies for Dockyards are generally of robust construction, have a high IP rating, a high level of corrosion protection and a range of electrical protection devices, including RCDs and Earth Continuity Monitoring.

At our Harlow Engineering Centre we have a Projects Team who are keen to be involved in the early stages of a new project, to ensure we fully understand the installation requirements and to make a contribution to the product design. Our Projects Team have acquired a wealth of experience in the military field and are keen to make a contribution.





6 way FEPS GIU with Military and Industrial outlets



Shelter Distribution Unit with Military and Industrial Inputs and Industrial Outlets.



28V DC Power supply with Military and Industrial Inputs and 4 x outgoing circuits



4 way 13A socket outlet assembly with Military Input.

The Blakley Electrics range of FEPS distribution equipment is compatible with FEPS and FEPDS In Service equipment and offers a similar level of functionality and electrical protection. Models with industrial connectors are included, enabling interoperability with LAPDS and non-military systems and equipment.

A wide range of FEPS compatible products have been codified including:

- Mains Interface Units
- Generator Interface Units with 2, 4 or 6 inputs
- Shelter Distribution Units
- 3 phase to 3 phase Splitters
- 3 phase to 1 phase Splitters
- 1 phase to 1 phase Distribution Assemblies
- Final 13A distribution
- Adaptor cables to crossover between Military and Industrial connector types

Our FEPS compatible products have been supplied for many high profile projects and deployments. The products supplied include standard, codified items as well as project specific assemblies. Notable projects include:

- Interim Staff Working Environment (ISWE)
- Deployable Engineering Workshop (DEW)
- Giraffe Radar Mortar Protection
- Nimrod Base Station
- UAV Ground Station
- FOBs on Operation Herrick

A further feature of our FEPS range has been the development of composite assemblies incorporating sockets with different output voltages, which drastically reduces the number of boxes and interconnecting cables required on small and large scale deployments. As an example, the Shelter Distribution Unit (SDU) is fitted with 400V sockets to supply heavy loads such as Environmental Control Units, 230V sockets to supply laptops and domestic equipment and 110V sockets for tent lighting. All switchgear and transformers are integral within the SDU. The SDU is also fitted with Industrial and Military inputs controlled via a changeover switch, enabling the assembly to be fed from FEPS / FEPDS, LAPDS or a mains supply.

All Blakley FEPS compatible distribution equipment is designed with maintenance and servicing in mind. A comprehensive range of field repairs can be carried out by trained personnel and we offer a cost effective regeneration service for equipment requiring more than basic running repairs.

Our range of FEPS compatible assemblies continues to grow and we welcome the opportunity to develop bespoke versions for new projects.





LAPDS Plug-in, 110V,  
Fluorescent Lighting for  
Internal and External Use



LAPDS UCU and LDU Distribution Assemblies



Special Distribution Assembly for use in a High Ambient  
environment



LAPDS LGIU Assembly, 3200A

We manufacture a range of field power distribution and lighting equipment for military applications, ranging from high volumes of equipment for ITC or TDA tented camps, to a one off, high current Generator Interface Unit to supply a field hospital.

### Lighting & Power Distribution System (LAPDS)

LAPDS was developed as part of the Improved Tented Camp system (ITC) and was first used in Kosovo in 1999. Due to the scale of operations in Iraq, the Temporary Deployable Accommodation system (TDA) was introduced, which ran in parallel with ITC in Iraq and Afghanistan. The power and lighting assemblies used within TDA are similar in concept to ITC and developed from LAPDS. We have supplied large amounts of equipment for both systems.

LAPDS is a totally plug-in, outdoor distribution and lighting system that can supply all the power and lighting needs of semi-permanent tented camps set-up virtually anywhere in the world. Three-phase and single-phase mains power is available for Catering, Air Conditioning, Heating and Welfare Facilities and 110V Reduced Low Voltage power is provided for tent lighting. Lighting is plug-in and utilises a dedicated, 6A, 3P, IP67, moulded, connection system and 110V IP65 luminaires.

LAPDS is designed to be supplied from Generators or from a permanent Host Nation Supply (HNS). The system is scalable, enabling the same distribution assemblies to be utilised, whether fed from a single 200 kVA generator or from a farm of six synchronised 320 kVA generators. The system comprises of cable and distribution assemblies in current ratings from 3200A to 13A.

### Bespoke Distribution Assemblies

We have made special field distribution assemblies for many different military installations. Although assemblies are project specific and made to order, many designs are derived from products that we have previously made, which have a proven performance in some of the harshest environments around the world.

Enclosures are generally of high IP rating and can incorporate crash frames and lifting arrangements as required. Different levels of segregation can be provided. Switchgear can be mounted to the front and rear. Cable entry and exit is generally through the base.

Incoming and outgoing connection can be via multicore flexible or steel wire armoured cables, or via plug-in single pole connectors rated at up to 630A each.

Incoming arrangements can incorporate manual or auto changeover switches, with phase failure and generator control circuitry.

Bus bar systems can be rated at up to 4000A and a range of short-circuit ratings can be offered.

An array of switchgear and equipment can be incorporated including ACBs, MCCBs and MCBs, RCDs, PCLM or Earth Continuity Monitoring, energy control, surge suppression, socket outlets, kWhr and other metering.



Typical Multi-way  
Power Cluster  
developed for the  
maintenance of the  
Typhoon Eurofighter



Power Cluster for Army  
Helicopter Base



Dockside Service Unit with 800A  
Incomer and multiple outgoing ways,  
hard wired and plug-in.



Cable Change  
Box, 1600A

We design and manufacture distribution assemblies for the servicing and maintenance of fixed and rotating wing aircraft, used by the RAF and Army.

### Protected Sockets and Power Clusters, 50Hz

Assemblies produced for the RAF incorporate 50Hz outlets only and can be single or multi-way. Single socket outlet assemblies are available in current ratings from 16A to 125A and in voltages of 230V and 400V. Multi-way assemblies have a single incoming supply, a mains isolator and any combination of sockets, including 110V outlets for general purpose power tools and equipment. All mains voltage sockets are in accordance with Technical Bulletin TB 03/05 and incorporate RCD and PEMS protection.

### Power Clusters incorporating Aircraft Outlets

Assemblies produced for Army helicopter bases incorporate 50Hz Industrial outlets and 200V 400Hz and 28V DC Aircraft Outlets. The associated protection equipment, isolation transformers and transformer rectifiers are all integral within the Power Cluster.

Industrial outlets are in accordance with Technical Bulletin TB 03/05 and Aircraft outlets are in accordance with BS 4G173. The quality of the 28V DC supply is in accordance with BS2G219 and the output can be User Adjustable to compensate for volts drop at the aircraft. When supplying Apache helicopters an interlock by-pass switch is fitted.

### Dockside Equipment

The refitting and maintenance of the UK's Royal Naval fleet of surface ships and submarines is carried out in the Rosyth and Devonport Dockyards. There is a need for equipment to be of robust construction, to provide a high level of protection for operators and to be capable of extended service in a very harsh, marine environment. Dockside assemblies are built to order and are designed to stand on the quayside without any additional protection. We have type-tested enclosure designs with an ingress protection of up to IP56. Enclosures are made from mild steel of up to 3mm thickness and a range of protective finishes can be applied. Alternatively, enclosures can be fabricated from stainless steel.

### Dockside Service Units (DSUs)

DSUs typically provide hard wired and plug-in outlets from 16A to 400A rating. All outputs have RCD protection and sockets supplying portable mains voltage equipment can incorporate Monitored Earth protection.

### Cable Change Boxes (CCBs)

CCBs are high current assemblies of up to 3000A rating and provide a local termination point for the large flexible cables required to supply vessels undergoing refit.

### Crane Supply Points (CSPs)

CSPs are high current socket assemblies (up to 400A rating) providing a plug-in supply for travelling cranes. A range of socket types and protection devices can be incorporated to meet specific user requirements.





Transformers for military applications, including 1:1 ratio isolation transformers rated at 12 kVA and 50 kVA



Field Lighting Kit Transformer



Auto Mains Failure Assembly, 400A SP Industrial Inlets and Military Outlets, PCLM protected.

Since the 1980s Blakley Electrics have been an active supplier to the UK Military. During this period we have designed and manufactured a very wide range of products including transformers, fixed and portable distribution equipment, 110V lighting and a variety of protection assemblies. Elsewhere in this publication there are details of products that we supply to the military on a routine basis. Here we highlight other specialist products that we also supply.

### **Transformers**

Ranging from portable transformers for the conversion of the Army Field Lighting Kit from 230V to 110V, to 50kVA 1:1 ratio isolation transformers to prevent filtered loads from tripping current operated RCDs, transformers can be designed for a wide range of applications. Sun shades, reflective paint finishes, etc., can all be incorporated to optimise performance in harsh environments.

### **Automatic Mains Failure (AMF)**

AMF assemblies are typically supplied in current ratings from 63A to 3200A. They can be for incorporation within permanent buildings or supplied in heavy duty crash frames with fork lift pockets and crane lifting points for temporary installation. Connection can be hard wired or plug-in, utilising single-pole or multi-pole connectors. Circuitry can be configured for mains or generator back-up and the generator start / stop interface can be designed to match specific site or machine requirements.

### **Electrical Intake Panels**

We have made Electrical Intake Panels for different types of containerised equipment. Input connection can be via military or industrial connector and a range of distribution and protection devices can be incorporated including Earth Resistance Monitors.

### **Voltage Operated Circuit Breakers**

Where the use of a current operated RCD is prevented due to high standing earth leakage, Voltage Operated Circuit Breakers (VOCBs) can be utilised to ensure container bodies, etc., do not rise to a dangerous voltage under fault conditions. We can supply VOCBs as replacements for obsolete devices and for new builds.

### **Energy Management**

The reliance on diesel to power generators in remote locations presents many logistical problems, particularly in hostile, inaccessible locations. We have been involved in the development of energy managed distribution systems which minimise the consumption of diesel, maximise the efficient use of generators and harness renewable energy sources.

### **Interim Field Lighting Kit (FLFK)**

The FLFK Interim Field Lighting Kit utilises the same 6A, IP67, plug and socket system used in LAPDS, in combination with low energy, 13W, 110V compact fluorescents and 18W tubular fluorescents. The system is simple to use, cost effective to purchase and economical to maintain. It can also be updated with new light sources, including 110V LEDs, as they become proven for use.



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