BLAKLEY
ELECTRICS

Distribution Equipment for the Events & Entertainment Industry

Blakley Electrics design and manufacture specialist electrical products for the Events and Entertainment industry

THE POWER PROFESSIONALS

Cert No. 902091

BLAKLEY ELECTRICS

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Enquiries can be submitted on line for all products by using the detailed enquiry form. Product questionaires are provided on line for many configurable products. Alternatively, submit your contact details via the Quick Enquiry form and we will contact you by return to discuss your requirements.

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The unique demands of the event and entertainment sector have resulted in the development of specific electrical distribution assemblies and accessories. The Blakley range has evolved with the sector and our products have been used to power major events, exhibitions and film sets around the world.

Speed of Installation

Whether the event is a major golf tournament, a music festival, a flower show or an outdoor film set, not only can megawatts of temporary power be required but the generators and distribution equipment have to be installed and then removed in days or weeks and not months or years. To help meet this logistical challenge there is widespread use of: multiple single core flexible cables to connect between generators and primary distribution assemblies: single-pole connectors rated at 400A (or higher) to distribute between high current distribution assemblies: multi-pole connectors rated up to 125A to supply sub distribution equipment and for final connections.

The Show Must Go On

Whether it is the opening ceremony of the Olympic Games or the headline act at Glastonbury: The Show Must Go On. We have a proven range of products to ensure continuity of supply, including Generator Interface Units and Automatic Mains Failure panels.

Electrical Protection

In temporary installations, the provision of suitable protection for installers and consumers is paramount. Not only must equipment be designed for use in the harshest conditions but effective circuit protection must be provided for operators, artistes & the public.

Servicing & Reconfiguration

Most distribution equipment is purchased for fleet use and used on different projects over many years. It is essential that spares are readily available and that the design of equipment allows for basic repairs to be made when equipment is in the field and for full servicing to be carried out in customers' workshops. The ability for customers to reconfigure distribution arrangements can greatly increase the utilisation of distribution equipment.

Transportation & Storage

Distribution equipment can often spend more time in storage, or in transit, than in use. The designs of our enclosures, lifting arrangements, crash frames, etc., recognise the risk of damage occurring in transit and also help address the need for the smallest possible storage footprint.

HIGH CURRENT DISTRIBUTION

BLAKLEY ELECTRICS

Cable Change Boxes, rated at 1600A

Dual input 2000A assembly with 6 x 400A outputs

Containerised switchboard, rated at 7400A

Power requirements have increased dramatically in recent years, which has seen the current rating of primary distribution assemblies increase accordingly. To meet this demand, we have produced distribution assemblies with bus bar systems rated up to 7400A, incorporating switchgear rated up to 6300A.
Cable termination arrangements can be particularly challenging at the top end of the range and have included the requirement to terminate up to forty-eight 300mm2 single core cables per ACB.

Containerised Distribution Boards

If required, high current assemblies can be housed in ISO containers. Containerised boards are designed and made to order and the Blakley Project Team are available to attend planning meetings to discuss detailed requirements. In addition to the main switchboard, containers typically incorporate a side personnel door (in addition to the main double doors); integral lighting, heating and forced ventilation; and small power outlets with RCD protection. Other equipment can be incorporated as required. Facility is usually provided for the internal auxiliary equipment to be fed from the main switchboard within the container or from an external source (when the containers are in long term storage).

Free Standing Distribution Boards

When containers are not required, our high current assemblies are free-standing and housed in purpose built enclosures with an ingress rating of up to IP56. Enclosures are usually mounted within heavy duty, galvanized crash frames, which protect the enclosure from accidental damage and provide various means to lift the assembly, such as via fork lift truck pockets and certified crane lifting points.
Incoming and outgoing connections are through the base of the assembly and can be via glanded cables or single-pole connectors. Anti-condensation heaters can be incorporated, as can multi-function power meters, which can be connected to an internal data collection unit or networked via an Ethernet switch.

Cable Change Boxes (CCBs)

The output connection from generators is usually via multiple single-core cables. However, in some locations there can be a requirement to connect loads via steel wire armoured cables, such as to supply a large temporary office complex or a media centre. Our CCBs are designed to accept multiple, incoming, flexible supply cables fed from one or more generator. On the outgoing side, the CCB is designed to terminate large, multicore, steel wire armoured cables. CCBs can incorporate bus bars rated from 800A to 3200A

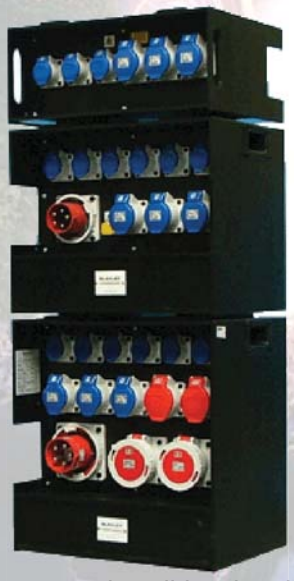
MEDIUM CURRENT DISTRIBUTION

BLAKLEY ELECTRICS

250A Distribution Assemblies in crash frames

125A TP&N Distribution Assembly in crash frame

125A SP&N Distribution Assemblies mounted in stackable frames



IDA series all-insulated assemblies, 125A & 63A

Our range of medium current Distribution Assemblies has been developed to meet the special requirements of Film and TV Lighting, Outdoor Broadcasts, Events, Exhibitions and Festivals. We stock standard models up to 125A rating (details are on our website) but specialise in making non-standard items to individual customer requirements.

Enclosures

We offer enclosures made from mild steel, stainless steel or high density polypropylene. Enclosures can be stackable, incorporate appropriate lifting arrangements (fork lift pockets, Hi-Ab brackets or carry handles) and are designed to withstand harsh treatment in use or whilst being transported. Larger enclosures can be mounted within galvanized or stainless steel crash frames. Metal enclosures can be painted in “fleet” colours and fitted with customer decals.

Power Input

A variety of input arrangements can be incorporated: an appliance inlet (fixed plug) to BS EN 60309-2 or a glanded cable complete with plug to BS EN 60309-2; single-pole connectors; a hard wired glanded connection. Adaptable boxes can be incorporated enabling customers to reconfigure assemblies to suit different incoming arrangements. Supply “on” phase indicators can also be incorporated.

Distribution

Assemblies typically incorporate sockets to BS EN 60309-2 rated at 16A, 32A, 63A and 125A, 3P 230V or 5P 400V. As standard, IPX4 sockets are fitted at 16A and 32A and IPX7 sockets are fitted at 63A and 125A. IPX7 sockets can be fitted throughout if required. Sockets can have associated “mains on” indicators.

Protection

Sockets are protected against overcurrent by MCBs and in most instances they are also protected by 30 mA RCDs. RCD protection can be individual (one RCD per socket) or grouped (one RCD protecting a group of sockets). In practice, to avoid nuisance tripping, it is recommended to protect sockets individually.

Higher current sockets can be protected by RCDs with variable sensitivity and variable time delay. If required, we are also able to incorporate RCDs with the facility to be disarmed via a key operated switch. Indicator lights are incorporated to show the status of the RCD protection.

Metering

Multi-function meters can be incorporated to display amps, volts and record kW consumption, etc

LOW CURRENT DISTRIBUTION

BLAKLEY ELECTRICS

Stock 230V assemblies

To complement our high and medium current distribution products, we offer a range of 230V final distribution assemblies and other accessories.

We stock a standard range of portable distribution assemblies rated at 13A, 16A, 32A and 63A, and we can manufacture non-standard versions to meet the requirements of individual customers.

We offer a standard range of multi-pin extension leads rated from 13A to 125A, at 230V and 400V, made from HO7 RN-F black rubber cable. Non-standard extension leads can be made to order, including single core flexible cables fitted with single-pole connectors at 150A and 400A.

We also stock a wide range of loose cable, plugs, sockets and spares. We are able to offer these at competitive prices and our Customer Service Centres in Crayford and Wakefield would be pleased to receive any enquiries.

Many of these products are shown on our website and detailed on product data sheet ref. TMPDS28.

FILM LIGHTING

Custom Assemblies for Film Lighting

In 1981 BS5550 first detailed the main distribution. assemblies to be used for Film & TV Lighting, which were Intake Switch Units (ISU), Control Centres (CC) and Final Distribution Units (FDU). In addition, the use of BAC single-pole connectors for 150A and 400A connections was detailed, with BS 4343 (now BS EN 60309-2) multi-pin connectors to be used from 16A to 125A. Today, BS7909 has replaced BS5550 but the fundamental building blocks of a Film Lighting distribution system remain ISUs, CCs (now CDUs) and FDUs. More recent developments have seen the adoption of Keyed Single Pole Connectors (400A Powerlocks) and Socapex 19 pin connectors, which enable a bank of six lights to be supplied from one connector.

We do not supply a standard range of Film Lighting distribution assemblies. Instead we make assemblies to order, to a customer's exact specification.

Enclosures can be made from mild steel, stainless steel or high impact resistant insulated material. Assemblies can be stackable and designed for indoor or outdoor use. RCD protection is widely deployed and the incorporation of key operated switches to disarm RCDs can be provided. Our Project Team is available to discuss specific requirements.

AUTOMATIC MAINS FAILURE

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Combined 2000A AMF & distribution assembly

AMF assembly, 3200A

The use of Automatic Mains Failure (AMF) panels at large events is commonplace. Although AMF panels do not guarantee an uninterrupted supply, they should ensure that an event is only without power for a few minutes rather than a few hours.

AMF panels can be configured to control the mains supply and a stand-by generator or they can control two generators (duty and stand-by). The changeover control can be via a solid state, programmable controller or, alternatively, by separate phase failure relays, timers, etc. We have proven arrangements for both designs and it is for the user to evaluate the merits of having a complex, sophisticated electronic module incorporated within their equipment, versus a simpler circuit that they can maintain and adapt.

Our range of AMF panels extends from 125A to 3200A and assemblies are generally presented in steel enclosures mounted within crash frames. Contactors are used on assemblies rated up to 800A and ACBs are used for higher current ratings. All changeover devices are mechanically and electrically interlocked.

GENERATOR INTERFACE UNITS

GIU with 4 x 125A incomers, individually interlocked to ensure inlet pins are not live until mated with a connector

GIU with 6 x generator incomers, 3200A bus bars and 6 x feeders

Generator Interface Units (GIUs) can be used to achieve two main objectives, as outlined below.

Seamless Supply

If it is essential that the supply to a high profile event is completely seamless, this can be achieved by connecting multiple generators to a single GIU. The aggregate rating of the generators should significantly exceed the load to be supplied, so that if one (or more) generator should fail, the other generators can carry the load ensuring a seamless supply.

Optimising Generator Capacity

GIUs can also be deployed when there is a wide variation in the connected load. The GIU is a common marshalling point for multiple generators feeding single or multiple loads. Shared generators can be configured so that they will drop “in” and “out” as the load being drawn from the GIU fluctuates, allowing generator usage and fuel consumption to be optimised.

Synchronising & Interlocking

Synchronising is not carried out by the GIU but it can provide a reference voltage (for synchronising). If Appliance Inlets are used to connect generators to a GIU, it is essential suitable interlocking is incorporated to prevent live, exposed pins. We are happy to discuss detailed requirements.