

ENGINEERED SOLUTIONS CATALOGUE



Design and Manufacture of Fixed and
Temporary Electrical Distribution Solutions

ide SYSTEMS

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Changeover
Systems 4-7

Low Voltage
Systems 8-11

Intelligent Power
Distribution 12

Single Point Power
Distribution 13-15

Site Power
Distribution 16-19

Generator
Connection Points 20-21

Polyethylene
Power Distribution 22-23

DS2
Distribution 24-25

Useful
information 26-27

Design

Specialists in Electrical Engineering

ide design and manufacture
critical electrical distribution
solutions for a wide range of
industries across the globe.

ide
SYSTEMS



World Class Engineering

We design our solutions to create opportunities, solve problems and reduce risk for our customers.

Our equipment includes: Changeover Panels, Control Panels, LV Switchgear, Generator Connection Points, Power Distribution Panels and Power Cable, all ideally suited to both planned and emergency projects.

What Qualifies Us?

We have over 20 years' experience in electrical engineering across a wide range of industries, dealing in major worldwide commercial and industrial projects. This allows us to create the most innovative and versatile solutions to suit the requirements of our customers.



Service

Customer Care Is Our Priority

Here at ide we are passionate about the quality of service that we provide to our customers.

Supporting Your Requirements

We have a dedicated sales team operating from our Head Office and Manufacturing Centre in Cannock, right at the heart of the UK, offering expert advice on applications, specialist projects and equipment.

We are continuously striving to increase our levels of performance to exceed our customer's expectations.

High Quality Manufacturing

All equipment is specifically fabricated by our electrical engineers at our Manufacturing Centre in Cannock, incorporating only the highest quality components to ensure maximum performance and reliability.

All equipment is tested in-house by our test engineers and is supplied with a test certificate prior to delivery. We can also carry out annual testing on your equipment and issue appropriate certification for the next 12 months.

Industry Breakdown

We can deliver the right equipment for all your permanent and temporary electrical distribution needs. Below are some of the industries we currently serve.

- Industrial Power
- Construction
- Healthcare
- Fixed Power
- Generator Power
- Offshore
- Commercial
- Rail
- Military
- Events & Exhibitions

Motorised Changeover

ide offer a range of 3 and 4 pole, motor driven switches for operation via a suitably designed control circuit, or automatic switching of supplies motorised by a control module. Switches have three stable positions I-O-II, to ensure isolation between the two supplies.



Options

- Available 160A – 3200A
- 230V – 400V single and three phase 50hz
- IP rating: IP54 up to IP65 complete with outdoor canopy
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Door interlocking pad lockable handle
- Galvanised crash frame, forklift pockets and certified lifting points
- Deep sea controllers available upon request
- 230V auxiliary supply
- RAL colours available upon request

Manual Changeover

3 and 4 pole manual changeover switches are designed to transfer loads from one power source to another in a wide variety of applications. The range of manual changeovers that ide offer includes switches from 16A - 3200A.



Options

- Available 16A – 3200A
- 230V – 400V single and three phase 50hz
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Wall mounted if required
- Door interlocking pad lockable handle
- Galvanised crash frame, forklift pockets and certified lifting points
- Deep sea controllers available upon request
- 230V auxiliary supply
- Three position rotary handle
- RAL colours available upon request

AMF (Auto Mains Fail)

ide offer a variety of single and three phase AMF changeover panels ranging from 125A – 3200A for use on any temporary electrical installation.



Options

- Fitted with 125A – 3200A contactors, motorised MCCB's & ACB's
- 230V – 400V single and three phase 50hz
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Galvanised crash frame, forklift pockets and certified lifting points
- Door interlocking pad lockable handle
- Mechanically and electronically interlocked
- Deep sea controllers available upon request
- 230V auxiliary supply
- RAL colours available upon request

ATS (Auto Transfer Switch)

The ATS is a smaller lightweight solution to the AMF. Ranging from 32A-800A the ATS panel can be mounted indoors and outdoors to any wall, surface or generator, as well as within a crash frame.



Options

- Fitted with 32A – 800A contactors
- 230V – 400V single and three phase 50hz
- IP rating: IP54 up to IP65 complete with outdoor canopy
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Wall mounted enclosures
- Door interlocking pad lockable handle
- Mechanically and electronically interlocked
- Deep sea controllers available upon request
- Neon indicators to show on load supply
- 230V auxiliary supply
- RAL colours available upon request
- Standard ATS permanent mains - standby generator
- Mains – Mains
- Mains-Mains single line and dual line bypass – offering isolation in bypass mode for complete separation. It also allows safe works during installation set up or maintenance on the ATS panel without loss of supply

Case Study - Facilities and Services Sector

The rise in computing and the globalisation of business has driven higher quality electrical requirements for office-based businesses. While computers have been beneficial for companies for many years, they have recently become a critical component for successful operation. An electrical fault or failure effectively puts success on hold, leading to lower productivity, financial loss and the risk of lost database information.



Problem

When a power failure struck a UK solicitor's office in 2016 and took IT systems offline for several hours, the company risked potentially losing international customers. This motivated the company to rethink its current electrical equipment, particularly its distribution board.

The distribution board the company was using had been installed almost fifty years previously and, while it had been modified over the years, the amalgamated board was still outdated and not compliant with BS7671 IET Wiring Regulations Seventeenth Edition. The solicitors then turned to ide to bring the electrical infrastructure up to date and minimise downtime.

Why we chose ide

"We found ide on Google and decided to enquire on their website. Within the hour an engineer contacted us to discuss our requirements. A few days later they arrived to spec the job at our office in London. Their service was second to none and the quality of the panel was excellent, I would highly recommend."

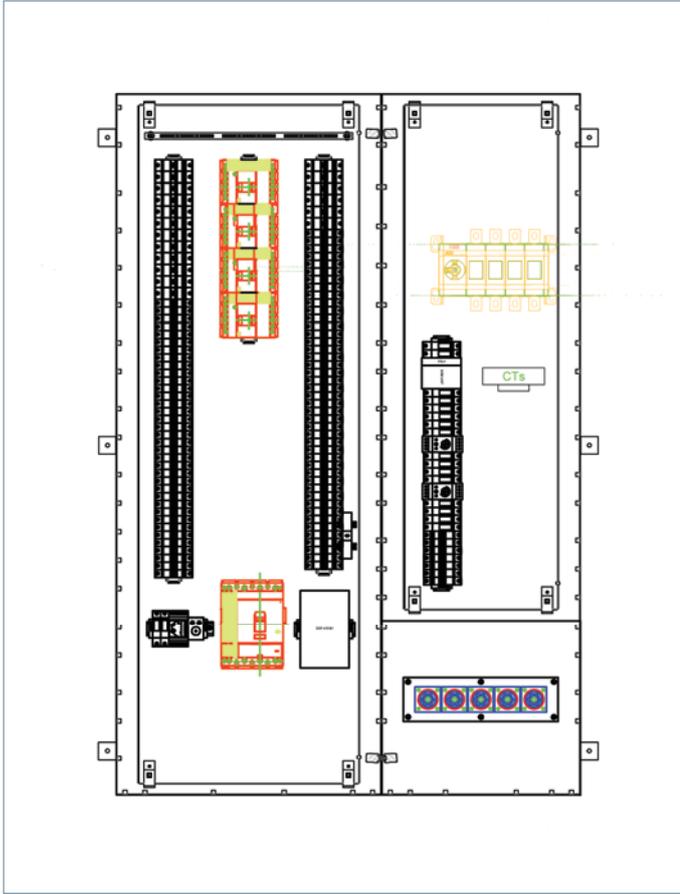
Contracts Manager

Solution

Engineers from ide designed and manufactured a 400A distribution board to replace the existing, dated equipment. The new distribution board is compliant with BS7671 IET Wiring Regulations Seventeenth Edition and includes a manual changeover switch connected to a four-pole moulded-case circuit breaker (MCCB), with panel mount 500A drain connectors offering a plug and play connection to a standby generator should a power outage occur.

As the original equipment was located next to the kitchen facilities of the main building, the board was designed into an IP55-rated enclosure with a knife-edge door closure and neoprene seal, ensuring protection from dust and water sprays. Internal safety shrouds were also added to protect against accidental contact.

To ensure that staff could react effectively to any problems, the control panel of the board included a global system for mobile communication (GSM) device. This sends text alerts to the onsite facilities management team in the event of a mains failure that ensures action can be taken effectively and immediately.



Product

- Approximate dimensions: 1600mm x 1130mm x 250mm
- IP55-rated enclosure to protect against water and dust
- Internal safety shrouds offering IP2X internal protection
- Stainless steel fabricated enclosure with textured grey finish to match surroundings
- 400A manual changeover switch
- Five powerlock drain connections rated at 500A
- 400A four-pole MCCB on incoming cables with adjustable earth leakage
- Rayleigh Instruments GSM transmitter on control panel for mains failed indication
- Perspex shield on enclosure for additional protection
- Lightning protector unit to remove transient voltages from mains incoming
- Digital display of amps, volts and frequency mounted on enclosure door



Site surveys...

ide will assign a project engineer to conduct a full site survey to understand your requirements. This means we can provide a detailed, accurate proposal - which will include detailed information on the solution best suited for your site.

Fixed Power

ide's low voltage switchboards are suitable for industries that depend on a fixed power source to support daily operations. All low voltage switchgear is configurable for TX and generator distribution or synchronised generator distribution allowing future extension if required.



Options

- 230V - 400V single and three phase 50hz
- Circuit protection ACB - MCCB's range 125A – 3200A
- IP31 (standard) rated up to IP65
- Busbar rating up to 4000A with full neutral
- Busbar fault rating-50kA 1/3 sec or 80kA 1 sec
- Fully rated earth bar with options for supplementary bonding or fully bonded
- ACB or MCCB devices as standard, fuse switch option available
- Options up to Form 4 type 6 separation
- RAL 7021 external paint finish as standard (others colours on request)
- IP20 Perspex secondary barriers fitted in front of busbars
- Front access floor or crash frame mounted site distribution
- Castell locks to ensure mechanical interlocking
- Multi-functional power metering
- Deep sea controllers available

Portable Power

Custom built low voltage switchboard solutions designed to be relocated to suit a wide range of applications.

Containerised Switchboards

ide offer a range of low voltage switchboards housed within 20ft and 40ft ISO containers which provide protection for equipment and personnel in harsh environments and also makes the logistics of transportation and lifting such equipment into temporary installations far easier.

As these solutions are used on different projects across the globe we offer additional options on the container fit out.



Offshore Power Distribution

ide manufacture cost effective offshore solutions to provide fixed and temporary power to the oil and gas industry. All equipment is housed in a stainless-steel enclosure with a high ingress protection rating to withstand harsh environments. Equipment has certified lifting points for underslung transportation across platforms.



Options

- 230V - 400V single and three phase 50hz
- Circuit protection ACB - MCCB's range 125A – 3200A
- Personnel door to the side
- Air conditioning unit
- Forced ventilation
- Emergency/Internal lighting
- Auxiliary transformer
- Heat and smoke sensor fire alarm
- Local RCD protection within container
- Secondary incoming supply with changeover for prolonged storage periods
- Cable entry on the side with vermin protection

Options

- Fitted with 400A – 3200A MCCB's or ACB's
- 230V – 400V single and three phase 50hz
- Tinned copper bus bar to assist in the prevention of corrosion
- IP rating: IP54 up to IP65
- Stainless steel enclosure
- Options up to Form 4 type 6 segregation
- Galvanised crash frame, forklift pockets and certified lifting points
- Multifunctional power meter V, I, Hz, kWh, kVA and PF
- Optional switchable and adjustable earth leakage if required

Case Study - Birmingham Good Hope Hospital

There are a number of inherent issues with older buildings, from external problems with the architecture to internal problems with water ingress. In particular, businesses and organisations operating out of older buildings often find that the structural ergonomics cause problems for utilities.



Problem

The Good Hope hospital in Birmingham — originally a Victorian house — faced a novel logistical problem with its electrical infrastructure. The existing brick built building that housed the 1000A low voltage (LV) switchgear that serves the hospital's Sheldon building required upgrading to enable the consolidation of several sub distribution units, as well as to achieve the compliance of the up to date BS standards.

The replacement switchboard enclosure needed to fit the existing foot print and utilise the existing cable trenches, to minimise additional ground work costs.

Why we chose ide

"The support and consultancy provided throughout the project was excellent. We were particularly impressed with the follow up after-care provided by ide's Project Manager."

Facilities Manager



Product

- GRP (Glass Reinforced Polymer) enclosure to BS476 pt 22, BS476 pt 7 Class 2, & BS7671.
- Ingress protection – IP54
- Switchboard – BS60439
- 1000amp 3 phase and neutral
- Busbar fault rating – 50kA/1sec
- Supply – 400V – 4 wire – 50Hz
- Enclosure – IP31
- Switchboard – Form 4 Type 2 Front Access

Solution

To address this problem, engineers from ide Systems designed a 1000A three-phase and neutral – 400Volt – Form 4 Type 2 front access switchboard, fitted with 4 pole thermal magnetic moulded case circuit breaker (MCCB) protection devices.

The LV switchboard was housed in a bespoke enclosure made of waterproof Glass Reinforced Polymer (GRP), which enabled the assembly to be delivered complete and pre-tested to site, avoiding site installation time and road closure disruptions.

ide designed the containerised switchboard in conjunction with the Hospital Estates Engineers and the outline design parameters, ensuring all units are “future proof” regarding standards and expansion.

Prior to delivery, representatives from the NHS trust carried out a Factory Acceptance Test (FAT) to ensure all specification requirements had been met and to advise on any additional requirements due to site changes. The customer requested additional access points for fire alarm cables and SWA cable access into the GRP distribution board, which were added by engineers prior to delivery.

ide engineers provided continuous technical support to the trust and are involved in the supply of further electrical equipment to upgrade the LV distribution network throughout the hospital site.

Design...

ide's Design Engineers use 3D CAD software to engineer solutions based on customer requirements. We can provide you with technical drawings so you can view the product before it is manufactured.



Intelligent Power Distribution

Intelligent Power Distribution

ide have designed a range of intelligent power distribution boards which can be used on a number of fixed and temporary installations. The distribution board has a built-in cloud based energy management system that allows the user to record data from any of the multifunction power meters. Data from the power meters is collected and transferred via GPRS or ethernet. The software can be accessed from anywhere in the world via any terminal (PC, iPad, smart phone etc.) providing the user has an established internet connection.



Features

Remote monitoring on usage allows the user to monitor:

- Voltage
- Current
- Frequency
- kWh
- kVA
- Power Factor

The distribution board features a remote trip capability to allow the user to turn off circuits when they no longer need to be used.

Options

- Available 32A – 630A
- Socket outlets from 16A – 125A both IP44 or IP67 available
- Hardwired distribution circuits for permanent application
- MCB'S have C – type trip curves, all RCD's and RCBO's are type A
- Multifunctional power meter V, I, Hz, kWh, kVA and PF
- Optional switchable and adjustable earth leakage
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosures available
- RAL colours available upon request

Why we chose ide

"The intelligent power distribution board was convenient for managing power usage on site, allowing us to save on energy costs and reduce our overall carbon footprint."

Site Manager

Single Point Power Distribution Systems

ide offer a range of custom designed single point power distribution systems otherwise known as power clusters. This equipment is popular in exhibition centres, stadiums, venues, food processing plants, power stations and wherever there is a need for multiple voltage supplies.

Power Clusters

Power clusters are custom built to suit the requirements of the application. The units can incorporate different voltages of 400V, 230V, 110V, 24V or 12V industrial socket outlets. All associated switchgear MCB, MCCB and RCD suit the requirements on site fed from a single power supply creating a power cluster with various options of current and voltage.



Options

- Available 13A – 2500A
- Multiple voltages
- Incorporate double wound transformer
- Socket outlets from 13A – 125A both IP44 and IP67 available
- MCB'S have C – type trip curves, all RCD's and RCBO's are type A
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Door interlocking pad lockable handle
- Optional switchable and adjustable earth leakage
- RAL colours available upon request

Case Study - Providing Power to ACC Liverpool

ACC Liverpool is an event campus that is home to the BT Convention Centre, Echo Arena and Exhibition Centre Liverpool. In 2016, the complex hosted more than 700,000 visitors over 362 event days, with events as diverse as major party-political conferences to concerts for artists such as Rod Stewart and Elton John.



Problem

The high demand and diversity of events requires a reliable and varied power source. While some exhibitions simply require 32A connections, some require 125A supplies for large LED video walls, meaning that power distribution panels need to be able to cope with this changing demand.

The events industry also requires reliable power that operates at the correct voltage and current. Power failures or nuisance tripping are not only disruptive and embarrassing for the event organiser, but can also be extremely expensive if an event has to be cancelled due to power failure.

Why we chose ide

"ide have provided a variety of fixed and temporary solutions to the venue over the years. They always provide high quality equipment and their overall service is excellent."

Facilities Manager





Solution

To deal with the demands of the event industry, when ACC Liverpool decided to extend its exhibition hall space in late 2015, the complex turned to ide to produce single point distribution systems (power cluster) to provide power to the 8100 square metres of event space. The halls are divisible into three separate 2700 square metre halls, one which has a 18 metre high roof for stage sets, requiring power distribution panels on the stage left and stage right.

Due to the stage constraints, the panels were mounted on the walls and were custom made to fit with the space constraints. To manage the needs of the different power requirements in the exhibition halls, the power panels were custom made to have a specific number of sockets and circuit breakers to ensure a reliable power output. ACC Liverpool also specified the level of residual current device (RCD) protection required to ensure the safety of its employees.

An incoming steel-wire armoured (SWA) cable provides the power distribution panels with mains power. This is then split into eight varying panel-mount plug and play socket outlets, which is distributed around the exhibition halls.

Installation...

ide can provide engineers who are qualified to BS7671 17th Edition Wiring Regulations, to carry out a range of installations onsite, such as:

- Site Cabin Connection
- Panel Installation
- Event Installation
- Testing of New and Existing Installation
- Generator Connection Points
- LV Switchboard

Product

The power distribution panels that ide Systems supplied were bespoke to the needs of ACC Liverpool. The panel enclosures were manufactured from Zintec steel that offered additional corrosion resistance, maintaining a professional appearance for years to come. For safety purposes, the enclosure also offered an internal protective shroud for switchgear access and an aluminium gland plate for incoming SWA cable supply.

The panel also featured a 630A 4-pole moulded case circuit breaker (MCCB) to protect against thermal overloads, short circuits and ground faults.

The panel contained eight power outlets, ranging from 32A 400V panel mount sockets to 400A 400V powerlock sets. These are all protected by moulded case circuit breakers (MCCB's) or miniature circuit breakers (MCB's) and have switchable, adjustable earth leakage relays.

The panel is fitted with a phase present relay on the main incoming 630A breaker (MCCB). This enables the operator to see when the panel is energized and all phases are present and correct. All outgoing socket outlets are fitted with a red neon light to signify that the socket supply is live.

Enclosure:

- Manufactured from Zintec steel – colour on request
- Enclosure Form 4 Type 3 bolted covers
- External interlocked isolator handle
- Aluminium gland plate for incoming SWA cable

Incoming:

- 630A 4-pole MCCB
- External door interlocked, isolator handle
- Phase presence relay to indicate mains supply is healthy

Outgoing:

- 1 set 400A source powerlock connectors protected by a 400A 4 pole MCCB c/w adjustable, switchable, earth leakage
- 1 set 400A source powerlock connectors protected by a 250A 4 pole MCCB c/w adjustable, switchable, earth leakage
- 2 No. 125A 400V panel mount socket outlets protected by 125A 4 Pole MCB c/w switchable, adjustable earth leakage
- 2 No. 63A 400V panel mount socket outlets protected by 63A 4 Pole MCB c/w switchable, adjustable earth leakage
- 2 No. 32A 400V panel mount socket outlets protected by 32A 4 Pole MCB and 40A 4 Pole RCD

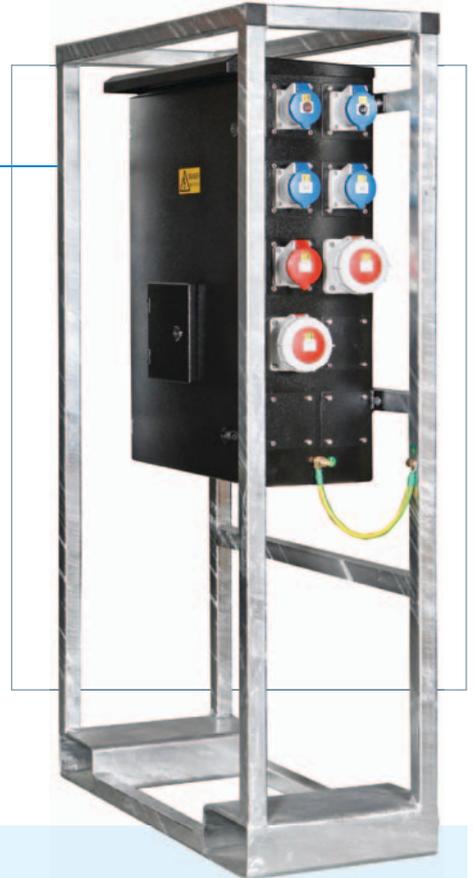
Temporary Site Power Distribution Boards

We offer a wide range of site distribution boards for use on temporary electrical installations, construction sites and industrial plants. We offer a plug and play option or a hardwired facility with a glanded incomer and single and three phase outgoing sockets.

125A Range



250A Range



400A Range



Options

- Available 63A – 630A
- 230V – 400V single and three phase – 50hz
- Interchangeable socket outlets from 16A – 63A both IP44 or IP67 available
- Glanded hardwire facility
- MCB'S have C – type trip curves, all RCD's and RCBO's are type A
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosures available
- Door interlocking pad lockable handle
- Secondary door for access to main supply for safe isolation
- Galvanised crash frame, forklift pockets and certified lifting points
- Optional switchable and adjustable earth leakage
- External earth stud on crash frame and enclosure
- RAL colours available upon request

Temporary Mains Distribution Units

Low voltage mains distribution units are engineered to withstand damage from harsh weathering conditions and corrosion due to the remote locations and industries they supply power to.



Options

- 230V – 400V single and three phase 50hz
- Circuit protection ACB - MCCB's range 125A – 3200A
- Dual incoming supplies – synchronisation of 2 supplies
- Tinned copper for harsh environments
- Stainless steel 1.4003 or Zintec 2.00 mm enclosures available
- IP rating: IP31 up to IP65
- External earth bar mounted on crash frame
- Aluminium gland plate
- PVC stuffing glands for ease of termination and glanding
- Fork lift pockets and lifting points
- Multi functioning power metering
- Deep sea controller available

Deliveries

We have a wide range of delivery services at our disposal which allow us to export solutions across the globe at a cost effective rate.



Case Study - Commercial Banking Firm

An architect's job is often a difficult balancing act between three core concepts: firmness, commodity and delight. A building should primarily be durable, it should then be easy and convenient to use and, finally, it should excite and delight its audience.



Problem

The client was called into one such building in the City of London, which faced a growing problem after three decades of use. The maritime insurance firm occupying the building has seen its home become a design icon, because its services, including ducts, lifts and electrical power infrastructure are located on the outside facade of the building.

While the building has generally stood the test of time, over the course of the last year the building's electrical services, have suffered from water ingress and corrosion. Because the firm generates over £30bn in revenue a year, it was critical that a continuous supply of power was maintained while repair work was carried out.

The facility's management also faced a secondary problem with free-runners trespassing on the roof of the building, where some of the electrical infrastructure is located, creating a security and safety concern.

Finally, because the building has listed status, any solution that was delivered could not be invasive and had to fit onto external gantries running on the outside of the building. This was a challenge because the gantries are only 500mm wide and situated at a height of up to 100m from the ground.





Solution

ide designed, manufactured and delivered a temporary overlay for the outside of the building. This consisted of a 630A four-pole moulded case circuit breaker (MOCB) and a range of 125A 400V switched interlocked socket outlets, which are designed to be tamper proof, preventing disconnection under load. The accompanying switchgear was placed behind locked windows and ide built the enclosures with an IP65 ingress protection rating, preventing damage from water and dust.

So that the units could fit on the narrow 500mm gantries, without damaging the listed building, ide's engineers redesigned the boards to be tall and narrow allowing them to be manoeuvred into position and bolted down.

Only from ide...

- Unique solutions designed to meet your requirements
- On-site consultancy
- Site surveys and installation of equipment
- Custom specification
- ALL equipment manufactured in the UK

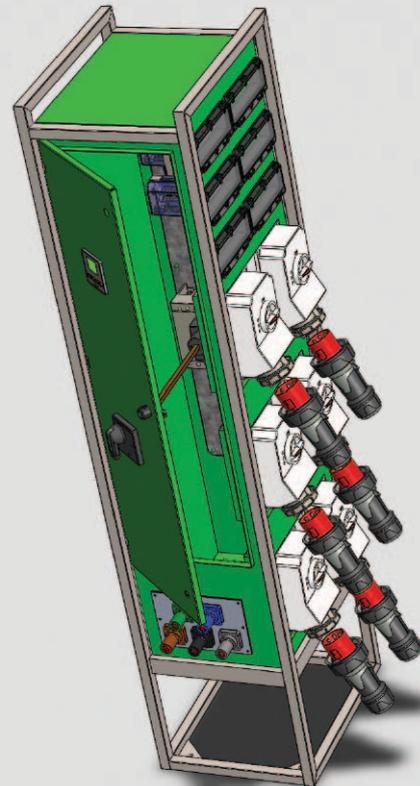
Product

- Stainless steel enclosure to match building colour
- High IP65 rating to protect against water and dust ingress
- Customised slimline design to fit 500mm wide gantries
- Powerlock incoming connectors at 630A for plug and play temporary overlay
- 630A four-pole MOCB protection on incoming cables
- 125A 400V switched interlocked sockets to prevent disconnection under load
- 125A four-pole MCB with fully adjustable and switchable earth leakage protection
- Transparent, lockable, windows for visual identification of switchgear status
- Identical second temporary overlay delivered for other parts of the building
- Ongoing service level agreement with ide Rental to manage emergency callouts

Why we chose ide

"ide provided first class consultancy on the project, offering a temporary solution to support the facility's electrical infrastructure whilst major building work was being conducted. The installation exceeded expectations, especially given the facility's status as a listed building."

Building Contractor



The Implications of Power Failure

Power failure is unpredictable and can occur when you least expect it. Within moments it can shut down infrastructure, resulting in loss of communication and reduced productivity. For this reason, businesses of all types are beginning to recognise the value of bringing temporary portable generators online safely and quickly in the event of power failure.

Solution

The generator connection point is a simple, cost-effective solution which can be fitted inside or outside of a building allowing a safe and quick connection of a generator to your facility's electrical system when required.

Connections can be made within a matter of minutes, ensuring minimal disruption to your business.

Our generator connection points are manufactured from 1.4003 (3CR12) stainless steel and are designed as a wall mounted connection point, hardwired or fitted with 400A or 800A drain powerlocks. We can design generator connection points to incorporate the following options:

- Alternative connections
- Local isolation
- Protective device
- Changeover device

We offer a wide selection of generator connection points, ranging from 125A - 3200A.



Options

- Available 125A – 3200A
- Incoming copper terminals 3P + N + E top entry or bottom
- IP rating: IP54 up to IP65
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- Crash bars incorporated to prevent risk of damage
- External earth stud
- Neon indicators to show on load supply healthy
- Door interlocking pad lockable handle
- RAL colours available upon request

Testing/Inspection...

All idle equipment is tested at our facilities and is supplied with a test certificate prior to delivery. If required we can carry out annual testing on your equipment and issue appropriate certification for the next 12 months.

Standard Range

GCP 400 - 630

400A or 630A three phase neutral and earth distribution unit designed to allow a temporary generator connection. Powerlock (Drain) connectors to 30 x 10mm copper bars with 300mm spreading distance for top entry outgoing cables.

The 4 Step Service Plan

1. Project Engineer will evaluate your site
2. Design a solution to suit the requirements of your facility
3. The solution is manufactured, dispatched and installed by our team of qualified engineers
4. Follow up inspection conducted upon request



Single-Core Cables

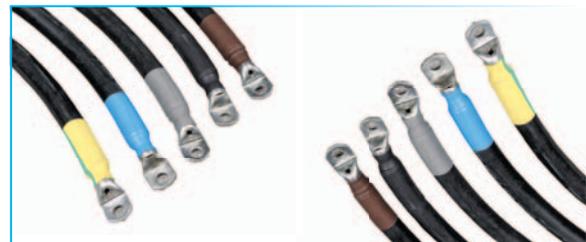
ide offer a variety of single-core cables for generator connection with lugged or powerlock terminations.

Powerlock Drain to Source

Cable (mm ²)	Amps	Length (m)	Weight (Kgs) Per 5 wire set	Order code
120	365	5	40	PDS1205
		10	80	PDS12010
		25	195	PDS12025
		50	387	PDS12050
150	425	5	49	PDS1505
		10	96	PDS15010
		25	238	PDS15025
		50	475	PDS15050
240	560	5	75	PDS2405
		10	150	PDS24010
		25	369	PDS24025
		50	737	PDS24050

Lug to Lug

Cable (mm ²)	Amps	Length (m)	Weight (Kgs) Per 5 wire set	Order code
70	250	5	25	LL705
		10	50	LL7010
		25	122	LL7025
		50	243	LL7050
120	365	5	39	LL1205
		10	77	LL12010
		25	192	LL12025
		50	385	LL12050
150	425	5	48	LL1505
		10	95	LL15010
		25	237	LL15025
		50	473	LL15050
240	560	5	75	LL2405
		10	147	LL24010
		25	368	LL24025
		50	735	LL24050



SWA and SY cable available upon request.

Industrial Polyethylene Solutions

ide specialise in the design and manufacture of polyethylene power distribution solutions for a wide variety of applications.

International Dockside Project

ide were contacted by a leading corporation in West Africa to supply a power distribution solution to support the construction of a major dockside project in Snake Island, Nigeria.

The purpose of the additional dockside was to facilitate demand for the firm's services, which include: offshore and pressure vessel fabrication, ship building and repair, industrial training and maritime support.

The client required an effective solution to supply power to equipment such as: hand tools, transformers, motors and lifting equipment. Due to the application of the project the client required the solution to be resistant to the surrounding atmospheric conditions.

Solution

ide designed, manufactured and exported multiple power distribution panels for the dockside project.

The 630A 3 pole distribution panels are manufactured from 10mm welded black polyethylene to IP65, ensuring protection from UV rays and corrosion.

The distribution panels feature two compartments (incoming and outgoing) each complete with lockable hinged doors and internal bolted and hinged shroud.

The distribution panels incorporate a common 1000A tinned HDHC copper busbar section (3P+N) with bolted canopy roof to protect from rusting.



Options

- Fitted with 63A – 3200A MCB's, MCCB's or ACB's
- 230V – 400V single and three phase 50hz
- Tinned copper bus bar to assist in the prevention of corrosion
- IP rating: IP54 up to IP65
- Stainless steel enclosure
- Stainless steel or galvanised crash frame forklift pockets and certified lifting points
- Options up to form 4 type 6 segregation
- Multifunctional power meter V, I, Hz, kWh, kVA and PF
- Optional switchable and adjustable earth leakage
- HDPE high density polyethylene available in a range of colours to suit the application

Polyethylene Distribution Boards

ide manufacture polyethylene distribution boards ranging from 16A-400A for use on any temporary electrical installation. All distribution boards can be modified to suit your requirements. We can also provide a wide range of H07RN-F multi-core cable to accompany any distribution board.



The importance of polyethylene

The moulded high density polyethylene is 10mm thick offering good impact resistance, chemical resistance and high rigidity. Density of 0.96 g/cm³, less than 0.01% moisture absorption, impact strength of 10 kJ/m², service temperature from -50 to +80°C, with greater than 10¹⁴Ω surface resistance.



Multi-Core Cables*

ide can supply 230V, 400V and socapex H07RN-F leads with plug and coupler made up to any length in any quantity.

Single Phase

Amps	Voltage	Length (m)	Cable (mm ²)	Weight (Kgs)	Order code
16	230	5	2.5	1.0	CR1635
		10		2.0	CR16310
		25		5.0	CR16325
		50		10.0	CR16350
32	230	5	6	1.8	CR3235
		10		3.6	CR32310
		25		9.0	CR32325
		50		18.0	CR32350
63	230	5	16	4.8	CR6335
		10		9.6	CR63310
		25		24.0	CR63325
		50		48.0	CR63350



Three Phase

Amps	Voltage	Length (m)	Cable (mm ²)	Weight (Kgs)	Order code
16	400	5	2.5	1.6	CR1655
		10		3.2	CR16510
		25		8	CR16525
		50		16	CR16550
32	400	5	6	2.9	CR3255
		10		5.8	CR32510
		25		14.0	CR32525
		50		28.0	CR32550
63	400	5	16	7.5	CR6355
		10		15.0	CR63510
		25		36.0	CR63525
		50		72.0	CR63550
125	400	5	35	17.0	CR12555
		10		33.0	CR125510
		25		82.0	CR125525
		50		163.0	CR125550



* Alternative cable lengths are available to your specification. Please call to request.

DS2 Marechal Power Distribution

The demand for diagnostic imaging continues to increase. Advances in technology improves diagnosis and patient care. Best practice quickly becomes established and more uses for imaging emerge.



As demand quickly outstrips supply, healthcare facilities can find themselves struggling to cope with lengthening waiting lists. Downtime when scanners are being maintained, repaired or replaced leads to further demand.

Mobile scanning trucks were introduced as a cost-effective solution to help clear these backlogs.

The DS2 is a concept that was designed over 20 years ago, to supply power to a wide range of mobile scanners – covering MRI, CT and PET/CT – and a range of other diagnostic modalities including: Ultrasound, X-ray and DEXA.

Research and Development

After conducting extensive research, our engineers retrofitted a 250A Marechal socket to the DS2 – as a standard 125A industrial socket would not suffice. Additional options have been added to the unit over the years to accommodate for the development of new technology and change in practice.

Since then the DS2 has become the leading solution for the healthcare industry. The solution has transitioned from hospitals to mobile scanning facilities, and is now frequently used by veterinary surgeries.

Power Requirements

In order to connect the scanner to the power outlets, each cable is fitted with a draw lever closing mechanism. To make a connection, the plug is inserted into the socket and then turned prior to engaging the draw lever with the lugs on the draw base.

Installation tip...

The socket should be installed within 10-12 meters of midpoint of the near side of the mobile unit.

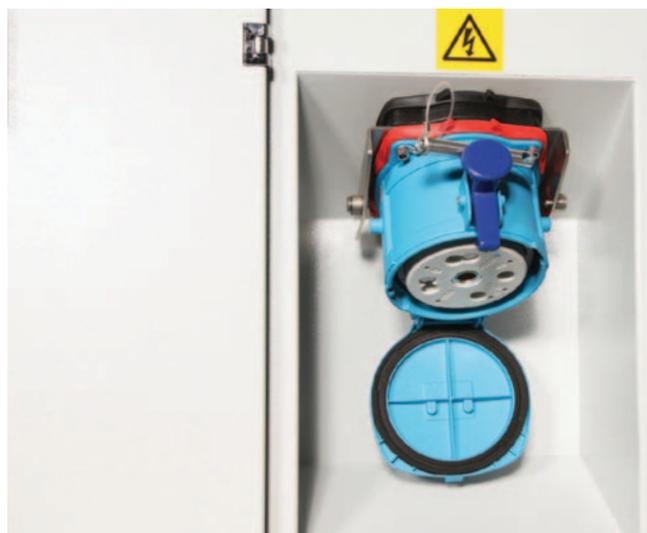
Power requirements for the MRI mobile scanner unit

• Peak power demand	86KVA
• Momentary power demand	64KVA
• Continuous power demand (more than 5 seconds)	46KVA
• Average power demand (based on typical 30min per hour scan time)	27KVA
• System idle quiescent	12KVA
• Source impedance line to line	0.1 OHM
• Input voltage specification	415V +/-5%

For additional installation options please contact enquiries@idesystems.co.uk

DS2-1

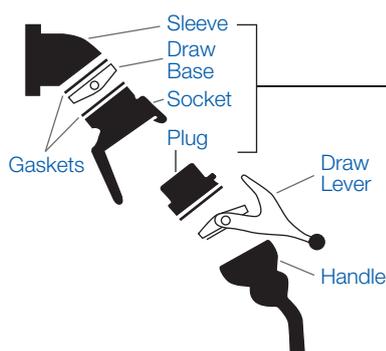
The 250A DS2 power distribution unit is housed within a wall mounted stainless steel enclosure. Incoming hardwire connection to terminals with a 250A 400V IP67 Marechal outgoing socket. External door interlocked, incoming protection padlockable isolator handle.



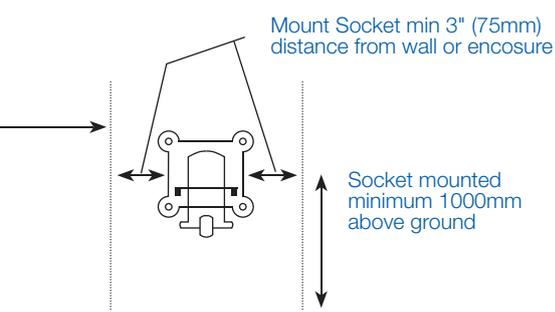
Options

- Fitted with analogue telephone extension which connects to hospital switch system
- Ethernet socket allowing for the transmission of scans to external facilities
- IP rating: IP44 up to IP65
- Door locking pad lockable handle
- Wall mounted or crash frames available
- Stainless steel 1.4003 or Zintec 2.00 mm enclosure available
- RAL colours available upon request

Connector Mechanism



Sitting requirements for socket



To ensure enough space, the socket must be mounted as shown.

Electrical Definitions and Applications

Definitions

Parameter	Designation	Unit
Volts	V or U	V (Volts) sometimes known as (E) electrical difference
Voltage between line to neutral	V_{L-N}	V (Volts)
Voltage between line to line	V_{L-L}	V (Volts)
Current	I	A (Amps)
Resistance	R	Ω (Ohms)
Frequency	f	Hz (Hertz)
Power	P	W (Watts)
The magnitude of real power in units of Watts (W)	lPI	W (Watts)
Reactive Power	Q	VAr (Volts Amps Reactive)
Apparent power	lSI	VA (Volts Amps)
Power Factor	Pf (nominal value 0.8pf)	Dimensionless with the range -1 to +1
Inductance	L	H (Henrys)
Capacitance	C	F (Farads)
Impedance	XL or XC Inductive or Capacitive	Ω (Ohms)
Phase angle of current relative to voltage in degrees	Φ (Pronounced Phi)	Degrees
Square root of 3	$\sqrt{3}$ (1.732)	3 phase calculations

Examples of particular applications of RCDs

RCD, IAn	Application
10 mA	A very sensitive device, sometimes used to protect socket-outlets of laboratory benches in schools
30 mA	Mobile equipment used outdoors must be protected by and RCD with a rated residual operating current not exceeding 30 mA
	In locations containing a bath or shower, all circuits of the locations must be protected by the use of one of more RCDs not exceeding 30 mA. Note that the requirement s "of the location"; in reality, this means serving or passing through the bathroom and is not limited to circuits within the zones
	Socket-outlets for use by ordinary persons for general use
100 mA	Where an RCD is installed because the earth fault loop impedance is too high for fault protection, i.e. disconnection time cannot be met by the overcurrent protective device
300 mA	Fire protection purposes in agricultural and horticultural premises
Adjustable ≤ 2000 mA	Devices with a residual operating current of 2 A or more are sometimes used in specific industrial, distribution applications or temporary supply supplies for entertainment related purposes. Advice must be sought from the designer. Any adjustment method or mechanism should not be accessible to ordinary, non-skilled or non-instructed persons

IP Explanation and Ratings

Degrees of Protection - First Digit

The first digit of the IP code indicates the degree that persons are protected against contact with moving parts (other than smooth rotating shafts, etc.) and the degree that equipment is protected against solid foreign bodies intruding into an enclosure.

0	No special protection
1	Protection from a large part of the body such as a hand (but no protection from deliberate access); from solid objects greater than 50mm in diameter
2	Protection against fingers or other object not greater than 80mm in length and 12mm in diameter
3	Protection from entry by tools, wires, etc., with a diameter of thickness greater than 1.0mm
4	Protection from entry by solid objects with a diameter or thickness greater than 1.0mm
5	Protection from the amount of dust that would interfere with the operation of the equipment
6	Dust tight

Degrees of Protection - Second Digit

The second digit indicates the degree of protection of the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.) Submersion depth and time must be specified by the end-user. The requirement must be more onerous than IP67.

0	No special protection
1	Protection from dripping water (vertical)
2	Protection from dripping water (@ 15°)
3	Protection from sprayed water
4	Protection from splashed water.
5	Protection from water projected from a nozzle
6	Protection against heavy seas, or powerful jets of water.
7	Protection against immersion
8	Protection against complete, continuous submersion in water

IP Letter Code		IP	
1st Digit	2nd Digit	1st Digit	2nd Digit
0	Non protected	0	Non protected
1	Protected against solid objects greater than 50mm	1	Protected against dripping water
2	Protected against solid objects greater than 12mm	2	Protected against dripping water when tilted up to 15°
3	Protected against solid objects greater than 2.5mm	3	Protected against spraying water
4	Protected against solid objects greater than 1.0mm	4	Protected against splashing water
5	Dust protected	5	Protected against water jets
6	Dust tight	6	Protected against heavy seas
<small>Note: EN 60529 does not specify sealing effectiveness against the following: mechanical damage of the equipment; the risk of explosion; certain types of moisture conditions, e.g. those that are produced by condensations; corrosive vapours; fumes; vermin</small>		7	Protected against immersion
		8	Protected against submersion (see note)

Cable and kVA Charts

Cable Data

H07RN-F is a double insulated, Ethylene Propylene Rubber, flexible cable (usually black) designed to withstand: the weather, oils/greases, mechanical and thermal stresses. Applications include: industrial environments, mobile power supplies, worksites, events for audio and visual equipment, drainage and water treatment, and dams and port areas. Conforms to BS EN 7919.

H07RN-F

No. x Cross Sectional Area (mm ²)	Max Current In Free Air (A@30°C)	Approx. Overall Diameter (mm)	Approx. Cable Weight (kg/m)	Approx Voltage Drop (V/km)	Gland Size (Brass mm)	Gland Size (Plastic mm)
1 x 35	162	18.5	0.52	1.1	25	25
1 x 50	198	21	0.72	0.77	25	32
1 x 70	256	23.5	0.97	0.57	32	32
1 x 95	314	26	1.24	0.46	32	32
1 x 120	365	28.5	1.54	0.38	32	40
1 x 150	422	31.5	1.89	0.32	40	40
1 x 185	484	34.5	2.3	0.26	40	40
1 x 240	573	38	2.94	0.23	50S	50
1 x 300	663	41.5	3.66	0.2	50	N/A
3 x 2.5	29	14.5	0.21	14	20	20L
3 x 6	52	20	0.39	5.7	25	25
3 x 16	86	29.5	1.0	2.2	32	32
3 x 35	140	38	1.89	1.0	50S	50
5 x 2.5	29	17	0.32	14	25	25
5 x 6	52	24.5	0.63	5.7	32	32
5 x 16	86	35.5	1.53	2.2	40	40
5 x 35	140	41.5	3.59	1.0	50	N/A
18 x 1.5	22	23	0.7	23	32	32

kVA Ratings

The generator kVA rating to ampere conversion chart below is assuming a power factor of 0.8

kW	kVA	Single Phase			Three Phase					
		220V	230V	240V	380V	400V	415V	440V	460V	480V
6	7.5	34.1	32.6	31.3	11.4	10.8	10.4	9.8	9.4	9.0
9	10.0	45.5	43.5	41.7	15.2	14.4	13.9	13.1	12.6	12.0
12	15.0	68.2	65.2	62.5	22.8	21.7	20.9	19.7	18.8	18.0
16	20.0	90.9	87.0	83.3	30.4	28.9	27.8	26.2	25.1	24.1
20	25.0	114.0	109.0	104.0	38.0	36.1	34.8	32.8	31.4	30.1
24	30.0	136.0	130.0	125.0	45.6	43.4	41.7	39.4	37.7	36.1
32	40.0	182.0	174.0	167.0	60.8	57.7	55.6	52.5	50.2	48.1
40	50.0	227.0	217.0	208.0	76.0	72.2	69.6	65.6	62.8	60.1
48	60.0	273.0	261.0	250.0	91.2	86.6	83.5	78.7	75.3	72.2
60	75.0	341.0	326.0	313.0	114.0	108.0	104.0	98.4	94.1	90.2
80	100.0	455.0	435.0	417.0	152.0	144.0	139.0	131.0	126.0	120.0
100	125.0	568.0	543.0	521.0	190.0	180.0	174.0	164.0	157.0	150.0
120	150.0	682.0	652.0	625.0	228.0	217.0	209.0	197.0	188.0	180.0
140	175.0	795.0	761.0	729.0	266.0	253.0	243.0	230.0	220.0	210.0
160	200.0	909.0	870.0	833.0	304.0	289.0	278.0	262.0	251.0	241.0
200	250.0	1136.0	1087.0	1042.0	380.0	361.0	348.0	328.0	314.0	301.0
240	300.0	1364.0	1304.0	1250.0	456.0	433.0	417.0	394.0	377.0	361.0
320	400.0	-	-	-	608.0	577.0	556.0	525.0	502.0	481.0
400	500.0	-	-	-	760.0	722.0	696.0	656.0	628.0	601.0
480	600.0	-	-	-	912.0	866.0	835.0	787.0	753.0	722.0
560	700.0	-	-	-	1064.0	1010.0	974.0	919.0	879.0	842.0
640	800.0	-	-	-	1216.0	1155.0	1113.0	1050.0	1004.0	962.0
720	900.0	-	-	-	1367.0	1299.0	1252.0	1181.0	1130.0	1083.0
800	1000.0	-	-	-	1519.0	1443.0	1391.0	1312.0	1255.0	1203.0
1000	1250.0	-	-	-	1899.0	1804.0	1739.0	1640.0	1569.0	1504.0
1200	1500.0	-	-	-	2279.0	2165.0	2087.0	1968.0	1883.0	1804.0
1400	1750.0	-	-	-	2659.0	2526.0	2435.0	2296.0	2197.0	2105.0
1600	2000.0	-	-	-	3039.0	2887.0	2782.0	2624.0	2510.0	2406.0

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