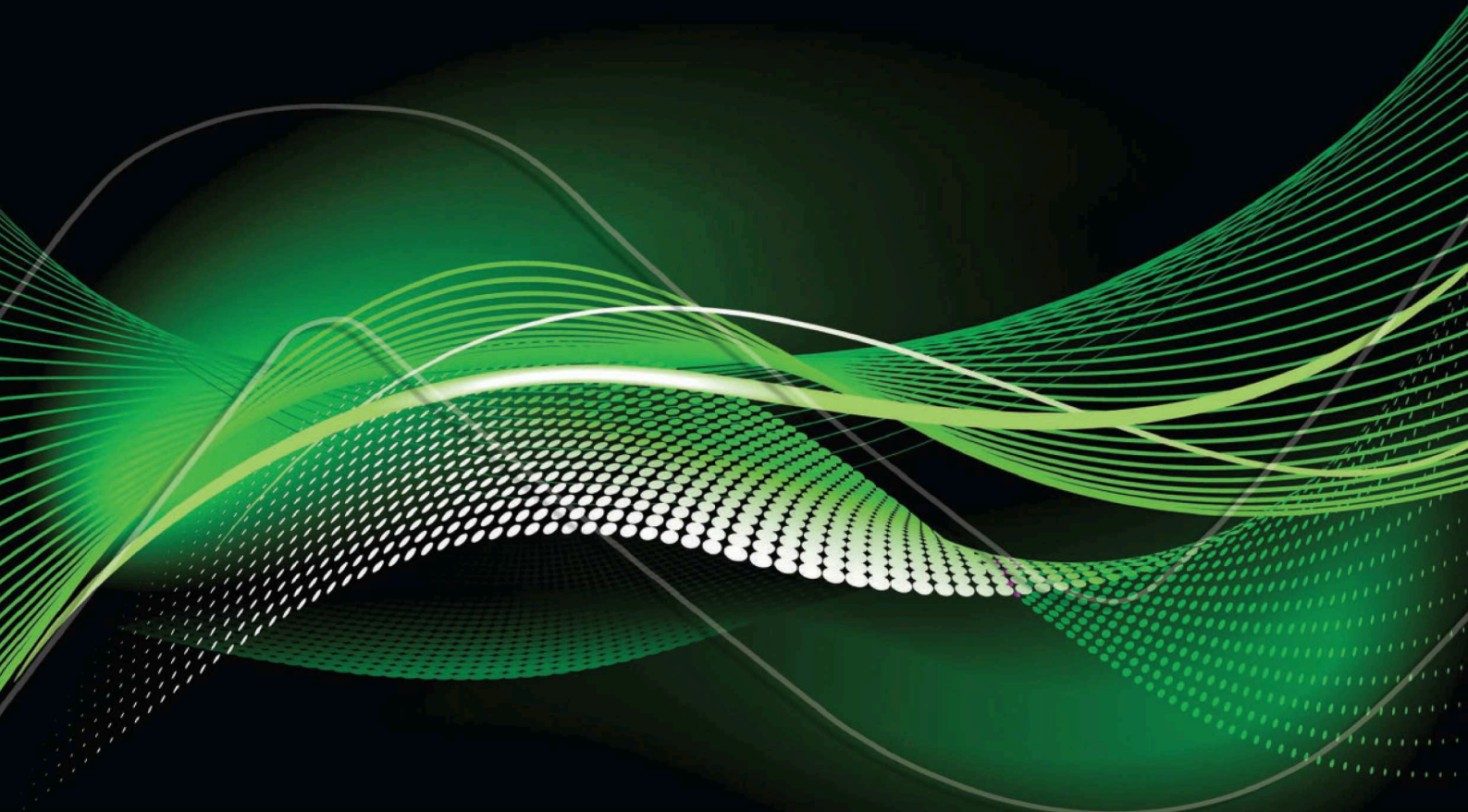


NIRVANA Engineering Ltd

INNOVATIVE STORAGE SOLUTIONS FOR RESERVE POWER



Nirvana Engineering

Nirvana Engineering is the UK's leading designer and manufacturer of storage systems for reserve power supplies required for industry worldwide.

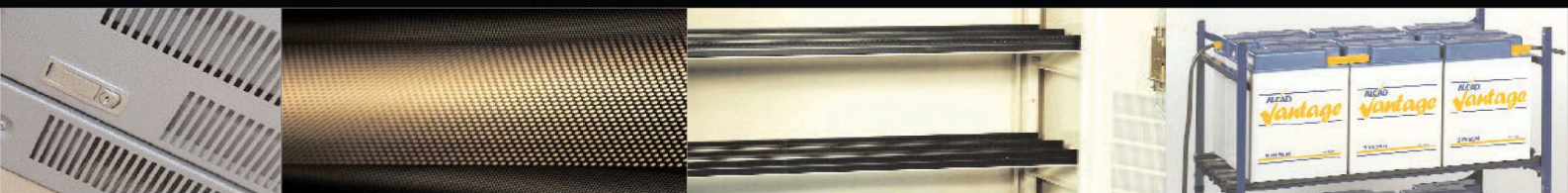
Established in 1981, the company quickly dominated the market by introducing steel rack systems to house battery power which effectively replaced those previously made in wood. Nirvana Engineering now supplies storage systems to multi-national companies including YUASA, EnerSys and FIAMM.

As technology evolves, the demands that are placed on systems requiring stored energy are increasing and presenting new challenges.

The reserve power industry globally is having to satisfy the demands for the supply of integrated energy packages and, vital to this, is the supply of bespoke storage solutions.

Nirvana Engineering provides diverse and innovative storage solutions to meet the needs of the reserve power industry from small to large bespoke projects. Through a process of continuous development, the company's innovative and flexible attitude to problem solving sees it working with a diverse range of companies that supply reserve power for industries such as telecommunications, UPS, utility/switchgear, security, emergency lighting, general electronics, medical, aviation, military and sport and leisure.

As a subsidiary of Mechan Controls PLC, Nirvana Engineering has access to a worldwide distributor network which extends across Europe and from the United States to Australasia and the Pacific Rim.



PRODUCTS

Global working environments require the provision of reserve power storage capacities that meet the needs governed by a diverse range of conditions including climatic, geological and environmentally challenging.

Additionally, constantly evolving technologies require an appropriate response to changes in technical requirements and the stringent demands of the end user.

Nirvana Engineering has extensive experience working with all main battery technologies. All products are designed to offer ideal systems of battery storage and cater for the individual requirements of each technology type whilst maintaining high levels of health and safety.

The range of products is designed to complement one another and ease the problems encountered during the installation and commission of reserve power systems.

OPEN BATTERY STANDS

The ranges of traditional open frame battery stands are suitable for the three main battery technologies of vented flooded lead-acid, sealed recombination lead-acid and nickel-cadmium. Structurally the stands fall into four main categories:

STANDARD

Standard open frame stands are designed to safely accommodate all types of industrial batteries. Stands are provided with adjustable feet and acid resistant epoxy coating.

All fasteners are supplied with insulating plastic caps and wall or floor stabilising brackets can be specified optionally. All open stands accommodating "wet" batteries are provided with insulating electrolyte resistant capping for the support rails, the same capping can also be specified for sealed VRLA type batteries if desired.

Other special features include extended legs with removal bracing for use on raised computer floors, in-board or external facilities for the mounting of circuit breakers or transition boxes and load spreading channels to distribute the foot point loads.



OFF-SHORE

Off-shore designation for a battery stand indicates that it satisfies the more rigorous environments encountered in off-shore applications.

The stand design is similar in construction to anti-shock types but employs much increased material sections. This makes the stands able to withstand moderate dynamic loadings. They are suitable for use on off-shore platforms and other similar environments where occasional high 'g' level shocks with small displacement are possible and regular low acceleration movement or vibration is a possibility.



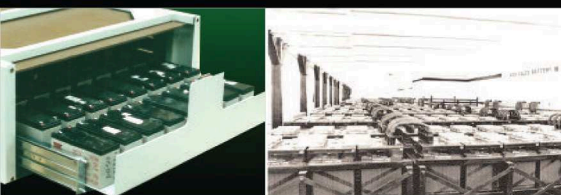
ANTI-SHOCK

Anti-shock stands are designed to be used in areas where vibration or externally applied force may result in a battery toppling from the stand. Typical applications are heavily manned plant rooms or areas where handling equipment is also present.



ANTI-SEISMIC

Anti-seismic stands have been developed for use in areas that are geologically unpredictable or for safety critical installations such as nuclear power stations. Anti-seismic stands are in use world-wide for critical battery installations in sites such as hospitals, military sites and power stations.





CLADED BATTERY STANDS

Cladded stands are based on the equivalent open stand and are supplied in kit form for assembly on-site. This can be a significant benefit over battery cabinets on sites where access to the final location is difficult.

SPECIFICATIONS: OPEN BATTERY STANDS & CLADED BATTERY STANDS

Electrolyte resistant coating

Structurally resilient welded and bolted construction

Compliant with BS6133

Compliant with EN50272 Pt 2

Support rails available with optional EPDM or PVC cappings for enhanced electrolyte and electrical protection

Standard, anti-shock, off-shore and seismic rated types available for all configurations of both open and cladded stands

Structural calculations can be made available to verify the suitability of seismic solutions

Provide the ultimate in dimensional adaptability for meeting site restrictions

Finished dimensions easily adjusted to match adjacent equipment

Insulating adjustable feet allow precise levelling

Options for the mounting of ancillary equipment such as fusing, circuit breakers and battery monitoring systems

Cladded stands available with protection ratings up to IP32

A wide range of finish colours are available to enable matching with adjacent equipment

Excellent access for installation and on-going maintenance needs

Can be supplied with extended legs for easy, cost-effective installation in rooms with raised computer floors



BATTERY CABINETS

Battery cabinets come in three versions:

A standard version for on-site installation of batteries

A heavy duty version for battery installation prior to shipment to the end user which reduces the time required for on-site installation and commissioning

Advanced PowerCab version

Standard and heavy duty versions can be configured to accept any type of battery technology and potentially infinite battery storage is possible using a suite of individual modules.

Recent variations on the standard cabinet design have offered sliding shelves to optimise battery storage whilst improving maintenance access. These are usually designed around the heavy duty version so the trays can be battery installed prior to despatch. The only on-site work then required is final linking between the trays.

Advanced PowerCab is a new lightweight cabinet of simplified construction for smaller batteries, ideally up to 38Ah 12V size, although larger batteries can be fitted if required.

SPECIFICATIONS: STANDARD & HEAVY DUTY

Electrolyte resistant coating throughout

Dimensionally compatible with a wide range of UPS equipment

Varied colour options for matching with adjacent equipment

H/D cabs for delivery with batteries installed

Seismically rated version available

Recent development of the H/D cabinet and its derivatives with sliding shelves for improved population density and ease of maintenance/replacement

Options to mount fusing, circuit breakers and the like. Circuit breakers can be interlocked through the door

IP21 protection as standard

SPECIFICATIONS: POWERCAB

Internal galvanised finish

Dimensionally compatible with a wide range of UPS equipment

Variety of external colour options for matching with adjacent equipment

Options to mount fusing, circuit breakers and the like. Circuit breakers can be interlocked through the door

IP21 protection as standard

Lightweight construction for ease of positioning on-site

Optional battery trays can be supplied for pre-positioning of batteries for rapid installation on-site





SPECIAL DESIGNS

TELECAB

The TeleCab is a special cabinet for the housing of front access telecom type batteries. The cabinet accommodates up to 6 parallel 48V strings within a 600mm x 600mm footprint. Dedicated plinths are also available for this cabinet for easy installation in raised computer floors.

SPECIFICATIONS:

Possibly the highest power density available in a battery cabinet

Electrolyte resistant coating throughout

Dedicated accessories for easy installation in raised computer floors – single tile fitment

Wide colour range

Able to accommodate 19" rack equipment in addition to the battery compartment

BATTERY TRAYS

As a direct result of close ties with the telecommunications industry, battery trays are available to suit 19 inch, 23 inch and ETSI stand specifications.

Typically designed to accommodate 4 off 24Ah or 4 off 38Ah batteries, they are supplied complete with a wiring loom, rear mounted termination, front handles and optional circuit breaker. As usual, colour matching to the main cabinet is possible and any special requirements can usually be catered for.



BESPOKE DESIGN

As a direct result of the flexible manufacturing system employed by Nirvana Engineering, we are able to offer solutions based on many of our existing products for special applications. Also, we are frequently involved in the design and manufacture of battery cabinets that are of entirely bespoke design.

This can extend to housing batteries, UPS and switchgear in a single cabinet, dynamic applications, small castored cabinets for small battery systems and special cabinets for cableways or switchgear.

WALL MOUNTED ENCLOSURES

Similar in design to wall-mounted enclosures for burglar alarms, wall mounted battery enclosures are available in sizes up to 600mm wide x 250mm deep x 800mm high. Internally they can be configured to accept multiple shelves of batteries, circuit breakers and termination gear.

The maximum total weight that can be supported as standard is 70Kg. Greater weights can be accommodated on request. The standard design is based on a 2 part enclosure, 1 part being base, back and sides with a removable combined top/front panel.

The shade of paint finish is optional within our standard ranges.



PLINTHS

A range of plinth designs have been developed that fall into 3 basic groupings:

- Raised floor plinths to support either UPS or battery cabinets
- Access plinths to improve bottom cable access for UPS or battery cabinets
- False floor plinths as an alternative to extended legs for battery racks

Plinths are generally available with the following options:

- Dimensionally matched with the equipment being supported
- Available for false floor heights of up to 700mm
- Fixed or removable tile supports on the periphery for false floor type plinths
- Peripheral retaining plates to ensure the supported equipment cannot be inadvertently pushed off the plinth structure
- Cable access holes and/or gland plates in the plinth top plate
- Height adjustment of +/- 20mm as standard
- Colour matching with the equipment being supported

In addition to the standard plinth designs, variations include:

- Modular walkways to improve access to raised UPS installations
- Plinths with integral access walkways
- Plinths with leg spacing designed to avoid under floor obstacles

TESTIMONIALS

"Fiamm UK has found Nirvana Engineering Ltd to be a reliable, enthusiastic and responsive professional supplier of battery stands and cubicles. Nirvana provides swift response to both mundane and specialist stand requirements, is a key component in the supply chain to the Telecom, Utility and UPS marketplaces, and is respected for its quality of service." Michael Moodie, Fiamm UK

"EnerSys UK, and its predecessor companies, has used Nirvana Engineering Ltd as its premier supplier of all types of battery accommodation for reserve power marketplaces for in excess of 25 years. During that time, Nirvana has established itself as the most reliable of suppliers with an unrivalled reputation for quality of both service and products. Nirvana has always demonstrated a willingness to provide effective solutions that continue to exceed the expectations of EnerSys UK's customers." Colin Chapman, Enersys UK

"Yuasa Battery Sales (UK) has worked with Nirvana Engineering Ltd for the past 20 years and its engineering quality and attention to detail has always been second to none. Due to the nature of our business no two stands ever seem to be the same and Nirvana has the ability to manufacture these quickly and efficiently. Over the years the company has responded to our requirements for software and specialist requirements and remains one of our most trusted and reliable suppliers." Matthew Jordan, Yuasa Battery Sales UK Ltd

"Energys France travaille depuis plus de 15 ans avec la société Nirvana Engineering. La qualité de ses produits (rack, chantiers habillés et armoires) et de ses services pour le développement des produits spéciaux sont très appréciés et répondent bien aux différents besoins clients par leur conception et leur robustesse. Nirvana Engineering est un partenaire fiable et sérieux." Rémi Mans, ENERSYS SARL

"I have worked with Nirvana Engineering Ltd for over 10 years. I have found the company to be 100% reliable with its product, its design and delivery. Nothing is ever too much trouble for the company when it comes to helping me and my team with special one offs as well as standard requirements making Nirvana totally priceless in my business. The quality and response service that Nirvana offers is second to none and it is respected throughout the whole Battery and UPS industry." Colin Smith, Chloride UK

"Eaton Power Quality has used Nirvana Engineering Ltd for over 10 years as an approved supplier. We have used the company to supply battery racks, enclosures and associated items for use in many projects and installations within the UPS and Telecom's market place. In this time we have found Nirvana, as a business, to be honest, open, reliable, very capable and helpful in all aspects of our dealings with the company." Lewis Phillips, Eaton Power Quality

"Uninterruptible Power Supplies Limited has worked with Nirvana Engineering Ltd for 12 years during which time many strong business agreements and relationships have developed as we have found the company to be very reliable, helpful and professional. The standard product ranges it supplies are always well manufactured, fully supported with ancillary items, parts and technical drawings, and always delivered on time. Nirvana has assisted our business on many occasions in designing bespoke equipment to tender specifications. These have developed into standard equipment as their design and manufacture of the equipment has complemented our equipment portfolio in the provision of critical power solutions." John Bladon, Uninterruptible Power Supplies Ltd

"Socomec Sicon Ltd has assembled and installed many Nirvana Engineering Ltd racks and battery cabinets and find the product and quality are consistently good. Where necessary, Nirvana has proven to be a reliable, enthusiastic and responsive professional supplier in providing swift response to help resolve any last minute issues caused by site conditions." David Raistrick, Socomec Sicon Ltd

"Intercel Energie BV in The Netherlands has been working with Nirvana Engineering Ltd for more than 10 years. During this time we have found Nirvana to be a reliable and professional supplier. The enthusiasm and ingenuity in finding either rack, cladded stand or cabinet solutions for the Telecoms and UPS-market has been a positive force within our business. Nirvana and its problem solving solutions have always been of the highest quality and service." Paul Dinkelstad, Intercel Energie BV

"Assured Power Associates Ltd has, over a period in excess of 30 years, traded with Nirvana Engineering Ltd for its extensive range of battery accommodation systems. The company has always supported us with sound technical advice, prompt issue of documentation, and timely delivery of the agreed solution. Whether it is a simple or complex solution Nirvana is in our opinion the best UK provider of these products for all varieties of standby power installation." Ernie Rothwell, Assured Power Associates Ltd





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