



# RTsystems

Back UP Power Solutions   Batteries   DCIM Management Software  
Environmental Monitoring   IT Infrastructure   Power Quality  
POP & Container Builds   Smart Maintenance   Lighting

 Digital Energy

 DELTA

 RITAR®

**Raritan**  
A brand of 

*Polarium*

**HIMOINSA**  
A YANMAR COMPANY

**tm**

 **ANORD  
MARDIX**  
A Flex Company


 **VESTWOODS**  
by Haier Energy

**AKCP**

**TRENDPOINT**  
Platform Monitoring™


**AUSTIN  
HUGHES**

**CS3**

 nlyte Software

**TRIDIUM**

 **EUSPEC**  
When Power Means Quality

 Sunbird®

 **signify**

**PHILIPS**

# 2026

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by Haier Energy



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Platform Metering™

AUSTIN®  
HUGHES



 nlyte Software

TRIDIUM 

 EUSPEC  
When Power Meets Quality

 Sunbird®

 ignify

PHILIPS

# Why Choose Us?

Our 24x7x365 monitoring and operations centre is equipped to monitor multiple facilities across different geographies – and already monitors more than 2 500 sites.

## Benefit to you

You always know what is happening across your entire real estate.

We empower our clients, contractors, consultants, end users, and partners through a continuous development and training process – and a raft of managed services.

## Benefit to you

You can fully exploit the equipment and services we provide.

We provide a multi-discipline service. We can dispatch a single team to address the full range of software and monitoring, electrical, UPS, and fire issues at one time. Because of our geographical spread, we can also send multiple teams to several sites in order to close projects quickly.

## Benefit to you

You save money. Your time to benefit is significantly shortened.

We are the only company of our kind that provides a complete service. We provide the world's best products for all possible power monitoring and other infrastructure needs.

## Benefit to you

You have choice. No vendor lock in.

We work closely with ICT consultants, facilities companies, and consulting engineers to ensure that the solution delivered is fit for purpose.

## Benefit to you

Your systems and solutions function optimally from the get-go.

We are independent.

## Benefit to you

You get the most appropriate product for your needs.

We're on the ground in Africa.

## Benefit to you

Our service is personalised. You know our names and faces.

We are agile.

## Benefit to you

We adjust price and service levels to suit your requirement and budget.

All our technicians are fully certified by our vendors.

## Benefit to you

You get the best skills on the continent.

We are responsive.

## Benefit to you

You don't wait for a ticket to be processed in an offshore contact centre and an order to come down the line to a local support centre.

Optimising energy usage is central to everything we do.

## Benefit to you

You get the best possible energy availability and efficiency – the basis for lower cost operations.

Our solutions integrate the various products on which your system depends.

## Benefit to you

Your costs are reduced. Your productivity is optimised.



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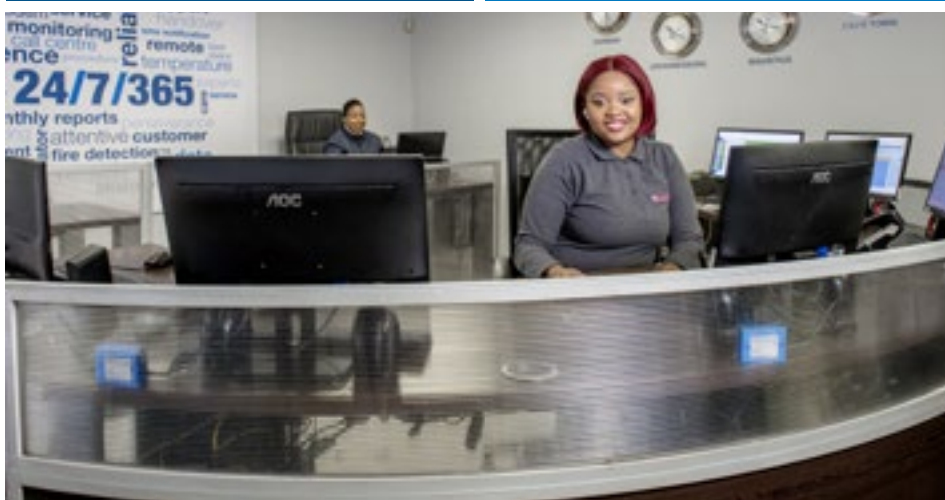
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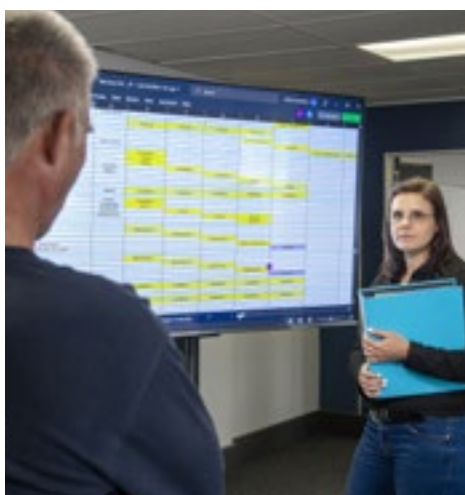


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LIGHTING

RT Systems has been providing power supply and reserve power solutions, management and monitoring of South Africa's and Africa's largest and most mission-critical data centres, server rooms, and building facilities environments since 2001.



**T**his year marks 25 years of RT Systems, and we are proud to celebrate this milestone with the clients and partners who have been part of our journey.

From the beginning, we recognised the inconsistency in the quality of power supply and reserve power products available in the market. This drove us to source only the best technologies worldwide—allowing us to deliver world-class, reliable, and efficient solutions.

Over the years, RT Systems has grown into a leading independent provider of power supply and energy management solutions for buildings of every kind. Today, we are a trusted partner to major IT service companies, systems integrators, and niche ICT players who rely on us to ensure the uptime and availability of the advanced technologies they deploy.

Our expertise extends across green energy, facilities management, healthcare, heavy industry, telecoms, and financial services. Clients value our accessibility and personal service—benefits that come from being a locally owned organisation with national reach, not an offshore call-centre operation.

Independence is at the core of our business. By remaining vendor-neutral, we select the most suitable products for each client's specific requirements. Our engineering team integrates multiple technologies into a single, fit-

for-purpose solution – delivering the best performance while reducing both capital expenditure and total cost of ownership.

For our vendor partners, we act as their in-country office, not just a distributor. They trust us to represent their brands and uphold their service ethic, and we trust them to maintain the quality we expect. This strong partnership ecosystem enables us to deliver true world-class service to our clients.

As part of our ongoing growth, we are introducing a Power Quality Division, a Lighting Division, as well as our own RT Systems-branded UPS and Li-ion Battery ranges – further strengthening our ability to meet evolving client needs.

At RT Systems, nothing matters more than the relationships we build. We are deeply grateful for the long-standing support that has fuelled our growth and inspired us to continually innovate with industry-specific products and solutions.

As we celebrate 25 years, we look forward to new opportunities, continued collaboration, and a future of shared success.

**Richard van der Heijden**  
Managing Director



SINGLE PHASE UPS

# UPS

THREE PHASE UPS

1/3/5/6/10 KVA UPS

10/15/20 KVA UPS

20/30/40 KVA UPS

25/75/150/  
200 KVA UPS

50/300/500/  
600 KVA UPS





### MX Series, Line-interactive 1.1/2/3 kVA

The Amplon MX line-interactive UPS provides pure sine-wave quality compatibility for versatile application to protect devices and prevent small-and-medium businesses from power failure and voltage variations all in a small footprint. The Amplon MX series features enhanced output power factor 0.9, and AVR efficiency up to 96.5%, resulting in a greater power supply for critical loads at significantly less operating cost.



### N Series, Single Phase 1/2/3/6 kVA

The Amplon N series is a true online double-conversion UPS that can provide your critical equipment with reliable, stable sine wave power. It features significant advantages, including an output power factor of 0.9 and up to 93% AC-AC efficiency for greater energy savings. The Amplon N series provides a safe power supply guaranteed for mission critical applications such as work stations, POS, ATMs, servers, and more.



### R Series, Single Phase 1/2/3 kVA (Extended Runtime Model)

Delta's Amplon R series is an online double-conversion rack mountable UPS providing consistent sine-wave power to your critical equipment and reliable protection for IT equipment and data centres. The R series offers an output power factor of 0.9 and a best-in-class AC-AC efficiency of up to 93% for greater energy savings. The Amplon R series leads the industry in combining compact size, availability, flexibility, and low total cost of ownership.



### RT Series, Single Phase 1/2/3 kVA

The Amplon RT 1-3kVA series is an online double-conversion UPS providing consistent sine-wave power to your critical equipment. It supports personal computers, networks, servers, VoIP and telecommunications. RT 1-3kVA series features an output power factor of 0.9 and best-in-class AC-AC efficiency up to 94% resulting in greater energy savings. Optional external battery pack can be connected for longer backup time to keep your applications safe and running smoothly at all times.



### RT Series Single Phase, 5/6/8/10 kVA Three Phase, 10/15/20 kVA

The Amplon RT Series 5-20kVA is an online double-conversion UPS that provides best-in-class designs in a compact 2U size, with high power density, system efficiency, and versatile configurations to fulfil customers' requirements. RT Series 5-20kVA UPS is the first in the market that offers standard Li-ion external battery cabinets, which deliver better power density and sustainability. Along with the parallel capacity of up to four units, the new series is the ideal small power UPS for mission-critical applications, such as servers, data centres, telecommunications, and manufacturing.



### HPH Series, Three Phase 20-120 kVA

The Ultron HPH is a true online double-conversion UPS offering the best-in-class combination of maximum available power, unbeatable energy efficiency and superior power performance for small data centres and other mission critical applications. With fully rated power (kVA=kW), the Ultron HPH provides maximum available power without de-rating the UPS. Thanks to the three level IGBT topology for both PFC (power factor correction) and inverter, the Ultron HPH features up to 96% AC-AC efficiency. Delta's advanced digital PFC control also contributes low iTHD < 3% and high input power factor > 0.99 resulting in significant TCO (Total Cost of Ownership) savings. Facilitating increased availability and power performance, the Ultron HPH is an ideal solution for protecting your mission critical operations.



### HPH Series, Three Phase 160/200 kVA

The brand-new Ultron HPH series 160-200kVA is a true online double-conversion UPS offering the best-in-class combination of power performance and efficiency for medium data centres, pan-IT, and other mission critical applications. Thanks to Delta's R&D expertise and excellent engineering capabilities, the Ultron HPH features up to 96.5% AC-AC efficiency, low iTHD < 3%, and high input power factor > 0.99 resulting in significant total cost of ownership (TCO) savings. Highlights of the highly reliable Ultron HPH series UPS design include key component redundancy and proactive battery health detection. With its combination of superior availability and power performance, the Ultron HPH 160-200kVA is the top choice for power protection of sustainable medium business operations.



### HPH Gen.2 Series, Three Phase 20/30/40 kVA

The latest HPH Gen.2 20-40kVA UPS offers a compact footprint with full rated output PF at 40 degree to optimise the UPS sizing. The 0.99 input PF and iTHD<2% ensure maximum upstream source compatibility. Low total cost of ownership is achieved by >96% efficiency, energy recycle mode, wider battery quantity configuration and inbuilt 15A charger. In addition, it provides a user-friendly interface touch panel, manual protection devices and caster wheels for easy deployment, installation and operation. All these features provide the ideal solution for various small and medium-sized data centres and critical power backups.



### NT Series, Three Phase 20-500 kVA

The Ultron NT series is a three phase UPS featuring customised I/P-O/P ratings for various applications. With N+X parallel redundancy or expansion, it guarantees high availability and reliability for your critical loads.

The Ultron NT series offers continued seamless protection for your business even under 100% unbalanced loading conditions. Its economy mode improves efficiency and saves operating cost.



### DPS Series, Three Phase 300-1200 kVA

Delta's superior Ultron DPS series 300 - 1200kVA UPS supports unity output power factor to deliver up to 9.6 MW power capacity to meet the demands for large data centres and co-locations. The Ultron DPS series guarantees the highest level of system reliability by supporting self-detection of key components with pre-warning function, multi-layered redundancy design, and complete power rating coverage. Along with optional battery management software, the DPS series enables users to achieve predictive maintenance and minimise system downtime, while lowering the total cost of ownership (TCO).



### DPH Series, Three Phase 20 - 80/120 kVA

In this IT intensive world with heavy data traffic driven by cloud, 4G/5G and media streaming applications, IT managers are facing the challenges of increasing rack power density and limited data centre space. Delta's innovative modular UPS technologies provide the answer to customers' demands for ultimate availability, excellent performance, and high efficiency. The brand-new Delta Modulon DPH series UPS 80/120 kVA achieves the industry's leading power density of 20kW per module in 2U height, offering the smallest footprint and best space utilisation. The Modulon DPH Series UPS is the ideal modular power protection for all critical IT applications with its small package, flexibility and seamless integration.



### DPH Series, Three Phase 25 - 75/150/200 kVA

The Modulon DPH supports ultimate availability for data centre operations and provides the benefit of "pay as you go" without over-sizing the UPS. While achieving ultimate availability, the Modulon DPH does not compromise on power efficiency performance. When availability, efficiency and expanding according to business needs are essential, the Modulon DPH is the ideal UPS system to provide power protection and total cost of ownership (TCO) savings.



### DPH Series, Three Phase 50 - 300/500/600 kVA

In this IT intensive world with heavy data traffic driven by cloud, 4G/5G and media streaming applications, IT managers are facing the challenges of increasing rack power density and limited data centre space. Delta's innovative modular UPS technologies provide the answer to customers' demands for high power density, high power performance, and ultimate availability. The brand-new Delta Modulon DPH series UPS 50-300/500/600kVA achieves the industry's leading power density of 50kW per module, offering the smallest footprint and best space utilisation. The Modulon DPH Series UPS is the ideal modular power protection for MW data centres to achieve total cost of ownership (TCO) optimisation.





# Delta 1kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@100W: +- 17 hours

@300W: +- 5 hours

@500w: +- 3,5 hours

- Delta R Series 1KVA UPS
- 2x Digital Energy 12V 100Ah LFP battery
- Additional charger card for R Series UPS
- CA-2 Battery cabinet: Dimensions 47x39x36cm
- Cabling and Fuse
- Optional Extra:
- SNMP IPv6 Card



Delta's Ampron R series is an online double-conversion rack-mountable UPS providing consistent sine-wave power to your critical equipment and reliable protection for IT equipment and data centres.



Server



Telecom



Industrial



VoIP



Storage



Network



# Delta 2kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@200W: +- 34 hours  
@800W: +- 8 hours  
@1500w: +- 4,5 hours

## OPTION 1

## Delta R Series 2KVA Long Runtime Lithium Ion Solution OPTION 1 Includes

- Delta R Series 2KVA UPS
  - **48V50AH Rack Mounted Li-ion Battery**
  - Rail Kit
  - Cabling
- Optional Extra:
- SNMP IPv6 Card



The Delta R series 2kVA long run time lithium ion-based solutions offer high performance capabilities, long life cycle and improved energy efficiency.

These solutions are ideal for long run time applications where frequent discharges are needed to supply continuous and reliable backup power to mission critical equipment and will reduce downtime and prevent costly disruptions.



Server



Telecom



Industrial



VoIP



Storage



Network



# Delta 2kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@100W: +- 34 hours  
@300W: +- 11,5 hours  
@500w: +- 7 hours

## OPTION 2

## Delta R Series 2KVA Long Runtime Lithium Ion Solution OPTION 2 Includes

- Delta R Series 2KVA UPS
  - **48V100AH Rack Mounted Li-ion Battery**
  - Rail Kit
  - Cabling
- Optional Extra:
- SNMP IPv6 Card



The Delta R series 2kVA long run time lithium ion-based solutions offer high performance capabilities, long life cycle and improved energy efficiency.

These solutions are ideal for long run time applications where frequent discharges are needed to supply continuous and reliable backup power to mission critical equipment and will reduce downtime and prevent costly disruptions.



Server



Telecom



Industrial



VoIP



Storage



Network





# Delta 2kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@200W: +- 26 hours  
@800W: +- 6,5 hours  
@1500w: +- 3,5 hours

## OPTION 3

## Delta R Series 2KVA Long Runtime Lithium Ion Solution OPTION 3 Includes

- Delta R Series 2KVA UPS
  - **48V150AH Rack Mounted Li-ion Battery**
  - Rail Kit
  - Cabling
- Optional Extra:
- SNMP IPV6 Card



The Delta R series 2kVA long run time lithium ion-based solutions offer high performance capabilities, long life cycle and improved energy efficiency.

These solutions are ideal for long run time applications where frequent discharges are needed to supply continuous and reliable backup power to mission critical equipment and will reduce downtime and prevent costly disruptions.



Server



Telecom



Industrial



VoIP



Storage



Network



# Delta 2kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@100W: +- 34 hours

@300W: +- 11 hours

@500w: +- 7 hours

## Delta R Series 2KVA Long Runtime Lithium Ion Solution OPTION 4 Includes

- Delta R Series 2KVA UPS
  - **Polarium 100AH 48V LFP Rack Mounted Li-ion Battery**
  - Rail Kit
  - Cabling
- Optional Extra:
- SNMP IPv6 Card



**OPTION 4**



*Polarium*

Polarium Batteries-: rechargeable smart Lithium Ion battery providing reliable power backup for hybrid, off-grid and grid-connected telecom sites worldwide.

Works in all conditions and environments.  
Extra protection against dust and moisture for prolonged life.



Server



Telecom



Industrial



VoIP



Storage



Network



# Delta 5kVA R Series Long Runtime Lithium Ion Solution

## RUNTIME

@600W: +- 11 hours  
@1000W: +- 7,5 hours  
@2000w: +- 3,5 hours

## Delta RT Series 5KVA Long Runtime Lithium Ion Solution

- Delta RT Series 5KVA UPS
  - **1 x 192V-50AH Rack mounted Lithium Ion battery**
  - DC links and comms cable kit
- Optional Extra:
- SNMP IPV6 Card



A total solution for reliable power with high availability and performance.

The Ampron RT Series 5kVA is an online double-conversion UPS that provides best-in-class designs in compact 2U size, high power density, system efficiency, and versatile configurations to fulfill customers' requirements.



Server



Network



Banking



POS





# Line Interactive UPS

## RT650VA

### INTRODUCTION

The RT Systems RT650VA Line Interactive UPS is a compact, intelligent power protection solution designed to safeguard personal computers and sensitive electronics from disruptions – including complete power failures. Reliable, efficient, and easy to use, it delivers peace of mind for both home and office applications.

### FUNCTIONS & OPERATION

#### DC Start Function

DC Start Function enables the UPS to be started up when AC utility power is not available and battery is fully charged. Just simply press the power switch to turn on the UPS.

#### Green Power Function

The product is equipped with a Green Power Function for saving power and protecting battery. Deep discharge protection is adopted on battery mode. If no load is connected to the UPS, it will automatically shut down after 5 minutes for energy saving while running on battery mode. The UPS will restart while AC recovery.

#### AVR (Automatic Voltage Regulation)

If the quality of the incoming mains is poor, the AVR boosts a low incoming voltage or reduces a high one. The load receives a voltage within the normal range.

#### Auto restart on AC recovery

#### Audio Indicator

Different audible alarm sounds for UPS status:

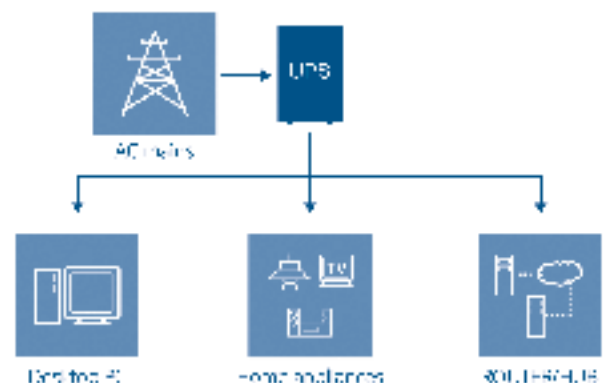
- Every 10 seconds: Battery Mode
- Every 1 second: Battery Low
- Every 0.5 seconds: Overload
- Continuous: Faulty



### PRODUCT FEATURES

- Microprocessor control – maximises reliability & efficiency
- Boost & Buck AVR – automatic voltage regulation
- DC Cold Start – power up without mains supply
- Green Power Function – energy-saving design
- Auto Restart on AC Recovery – hassle-free continuity
- AC Overload Protection – built-in safety
- RJ11/RJ45 Protection – shields LAN, modem & phone lines

### TYPICAL APPLICATION





# G2 Tower UPS

## RTT HV 1-3K

### INTRODUCTION

The RT Systems INNOVA Basic G2 Tower 1-3K UPS is a new generation product series. It has higher cost-effective performance, higher charging current, smarter charging, a wider range of rated voltages meeting various customer needs. INNOVA basic G2 series UPS product provides flexible configuration and offer multiple and extendable options to meet the increasing customised application demand.

### BASIC G2 ENHANCEMENTS:

- Higher charging current
- Improved silence performance
- Smarter charging for better battery life
- A wider range of adjustable input/output rated voltages
- Broader full-load input voltage range

### SUITABLE FOR:

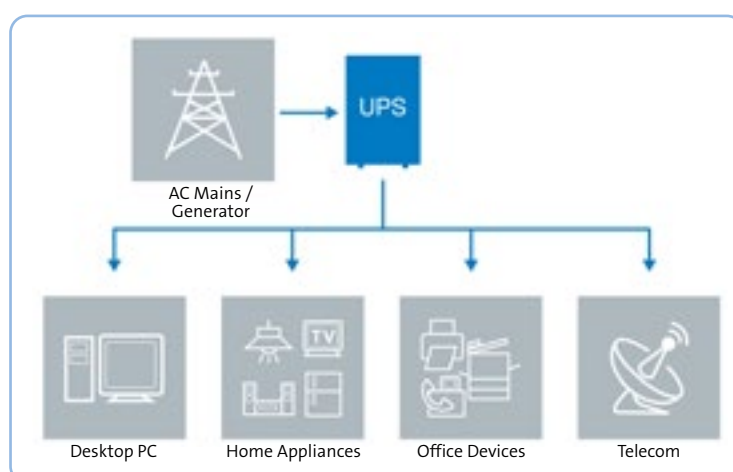
- Small and medium enterprises, branches of large enterprises, bank and government, office and computer room
- Kiosk equipment: ATM, Gate of subway and highway, Vending machine
- Networks, telecom equipment, telephone system
- PLC, automatic control equipment, industrial control panel
- Lab equipment



### KEY FEATURES

- Higher charging current provides faster charging time 1.5A
- Smarter charging(with temperature compensation) for better battery life
- More options for input and output rated voltage(200/208/220/230/240V)
- Programmable LCD display for quick UPS parameters configuration
- Various communication for easy management: RS232/USB, EPO, Mini slot
- Lower noise provides a quieter experience for users(<45dB/48dB for 1K/2K&3KVA)
- True double-conversion design with high adaptability to harsh mains conditions
- Output power factor 0.9, up to 12.5% more power offer than traditional PF 0.8
- CE certification

### TYPICAL APPLICATION





# Rack Mounted UPS

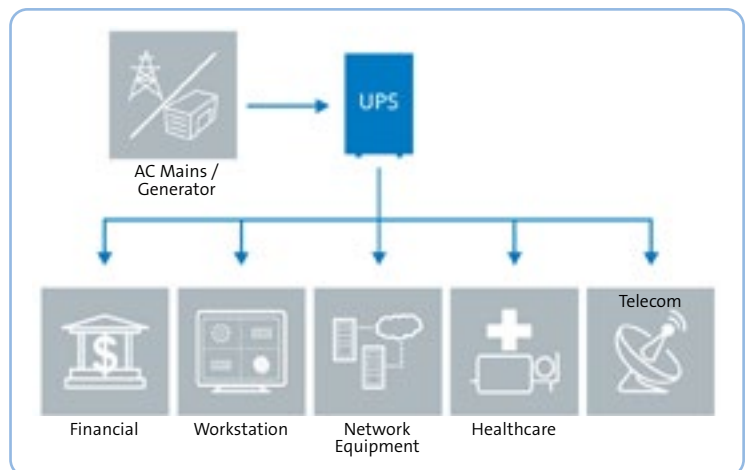
## RT HV 1-3K



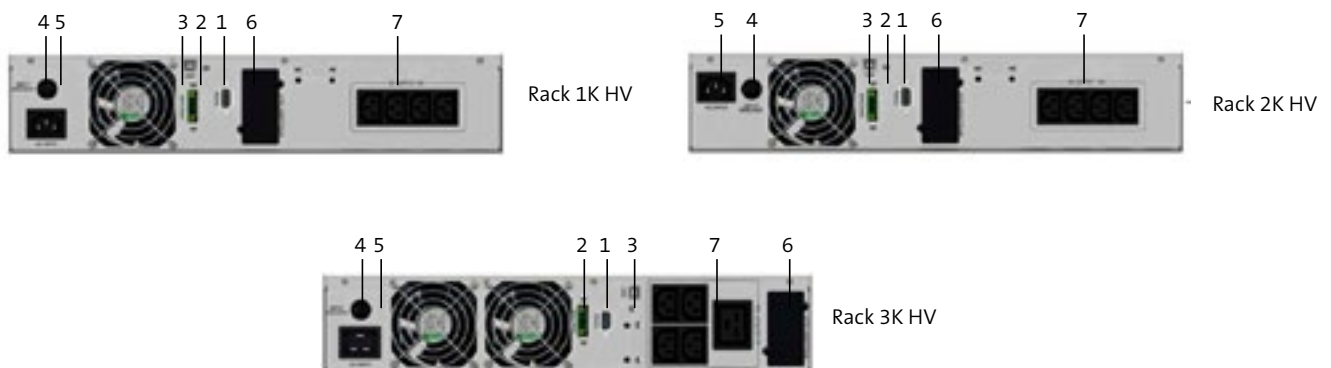
### KEY FEATURES

- True double-conversion design with high adaptability to harsh mains conditions
- 0.9 output power factor with up to 12,5% more power than traditional 0.8pf.
- 2U short depth compact size for space saving.
- Programmable LCD display for quick UPS parameters
- Various communication for easy management: RS232/USB, EPO, mini slot
- CE certification

### TYPICAL APPLICATION



### REAR PANEL



1. RS232
- 2.EPO/ROO
3. USB

4. Input Circuit Breaker
5. AC Input
6. Intelligent Card Slot

7. AC Output



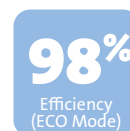


# Online Double Conversion Rack-mount UPS

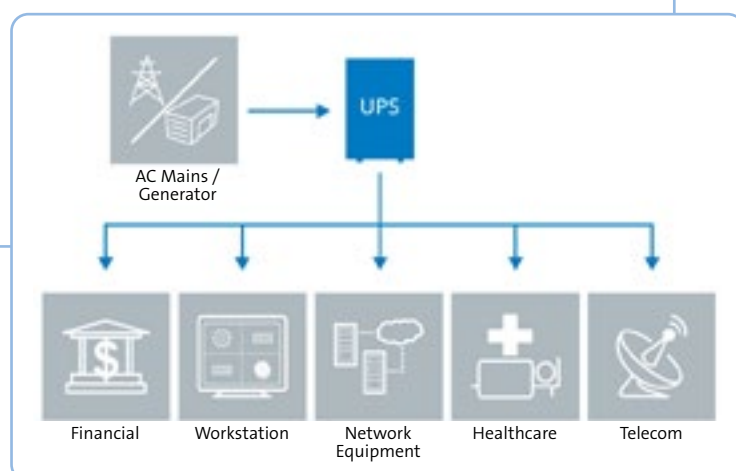
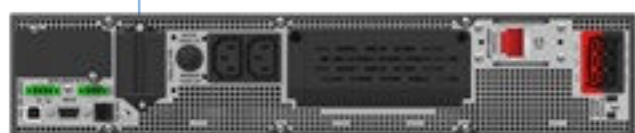
## RT HV 6-10K

### KEY FEATURES

- Output power factor 1
- No power derating in full operating temperature range
- Upgrade Winpower software seamlessly integrated with virtualisation platform
- Inverter mode efficiency 95%
- Input THDI <3%
- Output THDV <5%
- < 600mm depth can fit different dimension rack installation
- 3 hours recharging to 90% battery capacity for internal battery
- Maintenance bypass switch and parallel options are offered



### TYPICAL APPLICATION





# Batteries

*Polarium*



LITHIUM ION

LEAD ACID



## Safe, Intelligent, Low-Carbon and Environmentally Friendly

Ritar International Group was founded in 2002 and has more than 6,500 employees worldwide. It has always focused on the new energy industry and is committed to providing inherently safe energy storage solutions to global users.

Ritar has 8 major production bases in China and Vietnam, 11 global warehousing and logistics centres, and more than 100 national sales outlets.

In addition, Ritar also has a national

CNAS laboratory, more than 200 national invention patents, and more than 1,000 product types, including solid-state lead batteries, IDC-specific lead-acid batteries, UPS batteries, and lithium batteries. Through continuous research and development, production, sales and services, we have built a complete new energy industry ecological chain.

Our products are widely used in many fields such as the grid side, power supply side, industrial and commercial energy storage, household

energy storage, rail transportation, communication base stations, and data centres.

Ritar International Group will continue to uphold the spirit of innovation, devote itself to the field of safe energy storage, continuously promote the development of the new energy industry, and bring better products and services to global users.



## Production Ability

The company uses the latest automated production lines, and has obtained national patents for many of its industry-leading innovative production processes. The Vietnam plant has completed the first phase of its construction, and the second phase is under way.

Finished products are sent to the warehouse for storage, and all products are strictly inspected before leaving the factory. Ritar cooperates with many well-known logistics companies, and its transportation network covers both at home and abroad.





## Lead Acid Batteries



### FT Series Front Terminal VRLA batteries

FT (Front Terminal) Series is specially designed for telecom use with 12 years design life in float service. By adopting a new AGM separator and centralised venting system, the battery can be installed in any position while maintaining high reliability. The dimensions of the FT series is designed for 19" and 23" cabinet installation. It is suitable for UPS/EPS applications.



### HR Series High Rate Discharge VRLA batteries

HR (High Rate) series is especially designed for heavy load discharge applications with 8 to 15 years design life in float service. By using strong grids and specially designed active material the HR series offers stable performance during high current discharge requirements. The HR series offers 30% more power output than the standard range. Suitable for UPS/EPS where high current loads are required.





## RT Series

### AGM VRLA batteries from 1.3Ah to 28Ah

RT series is a general purpose battery with 6~8 years design life in float service. It meets with IEC and JIS standards. With up-dated AGM valve regulated technology and high-purity raw materials, the RT series battery has a reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency lights and security systems applications.



## HT Series

### High Temperature VRLA batteries

HT series is a high-temperature series sealed lead acid battery with 15 years of design life in float service. It meets with IEC, JIS and BS standards. With updated AGM valve-regulated technology and high-purity raw materials, the HT series battery maintains high consistency for better performance and reliable standby service life. It is designed for use under high-temperature conditions.



## RA Series

### AGM VRLA batteries from 33Ah – 260Ah

RA series is a general-purpose battery with 12 years of design life in float service. It meets with IEC, JIS and BS standards. With updated AGM valve-regulated technology and high-purity raw materials, the RA series battery maintains high consistency for better performance and reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency lights and security system applications.



## RL Series

### AGM 2V Series VRLA batteries from 200Ah – 3000Ah

RL series is a general-purpose battery with 20 years of design life in float service. With heavy-duty grids, thicker plates, special additives and updated AGM valve-regulated technology, the RL series battery provides consistent performance and long service life. The new grid design effectively reduces the internal resistance, which provides higher specific energy density and excellent high-rate discharge characteristics. It is suitable for communications backup power and EPS/UPS applications.



We create a sustainable society with our capability to store and utilise power and energy through our CSB acronym.

**C Creativity** – Thinking outside the status-quo to solve customer electrification problems with world-class existing products and development of new solutions.

**S Sincerity** – Using our customer-first approach through superior service and support from start to finish.

**B Belief** – Having the confidence to solve these electrification challenges through our diverse team culture of talented employees and partners.

Application	Industry Served
Long Duration Backup	Telecom
High Power Backup	Datacenter UPS
High Cycling	Renewable Energy
E-Mobility	Medical E-Vehicles
General Purpose	Lighting Security

## GLOBAL FOOTPRINT



## MANUFACTURING FACILITY OPERATIONS



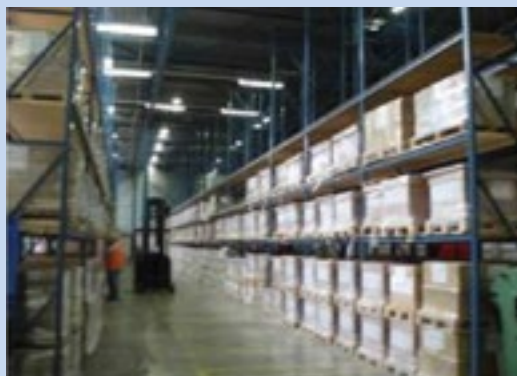
	 <b>Taiwan</b>	 <b>Vietnam</b>	<b>Total</b>
Floor area (m2)	120,000	100,000	220,000
Capacity (Units)	1,500,000	1,500,000*	3,000,000
Model produced	Mid-Large	4.5-40Ah	Full Range
Employee	500	1,400*	1900

## CSB Energy Technology (EMEA) B.V. Ridderkerk (Netherlands)



## Premises:

- 5000m<sup>2</sup> warehouse
- 900m<sup>2</sup> office space.
- Office-26 employees, including 5 sales in Europe





## Lead Acid Batteries



### HR Series

Standing for high rate, the HR series is designed to provide power backup for smaller output applications like those found in personal or business power backup applications. The HR family is VRLA-AGM construction, which means the battery is maintenance free, no need to add water and able to be installed in multiple physical orientations without affecting service life.



### HRL Series

HRL series, standing for high-rate long life, takes our HR and UPS series and expands upon its exceptional performance across various high-power backup power requirements.



### UPS Series

Standing for uninterruptible power supply, the UPS series is the first in a lineup of premium quality offerings from CSB for the UPS power application market. UPS series are specifically designed for high power discharge applications, like those found in data centres of today. Our UPS series uses the latest wafer-thin plate technology combined with special proprietary formula, all to provide optimum high-rate performance.



### XHRL Series

XHRL series is our premium offering in high-rate power backup applications meant for EMEA markets, taking HR, UPS, and HRL designs even further to provide extended service life and even higher power density in both front and top terminal designs.





## XHRL-FT Series

XHRL-FT series is our premium offering in high-rate power backup with a front terminal design for even higher power density in shorter duration, up to 30 seconds. XHRL-FT uses a unique separator design combined with pure lead construction. XHRL-FT batteries are meant for data centre applications in EMEA markets, taking HR, UPS, and HRL designs even further to provide extended service life and even higher power density in front terminal designs.



## XPL Series

XPL series is our premium offering in high-rate power backup applications meant for N. America, S. America, and Asia-Pacific markets, taking HR, UPS, and HRL designs even further to provide extended service life and even higher power density in top terminal designs.



## XPL-FT Series

XPL-FT series is our premium offering in high-rate power backup with a front terminal design for even higher power density in shorter duration, up to 30 seconds. XPL-FT uses a unique separator design combined with pure lead construction. XPL-FT batteries are meant for data centre applications in N. America, S. America, and Asia-Pacific markets, taking HR, UPS, and HRL designs even further to provide extended service life and even higher power density in front terminal designs.

## Why CSB for Your Application?

### Value

Products that provide customers the ability to realize long-term ROI with significant technical and financial savings.

### Quality

High performance of products to meet customer demands across various applications.

### Service

Commitment to a service-first approach with friendly, prompt, detail-oriented customer service across all departments.



# Polarium



## Safe, Smart, and Sustainable Lithium Ion Energy Storage

Polarium maximises value creation for their customers through their cutting-edge technology. Their modular battery technology is easily adaptable for further growth regardless whether within larger utility scale, mid-size Commercial and Industrial or Residential applications. They continuously develop and perfect their fully integrated hardware, software and services including end-of-life services. They re-shape the role of energy storage and empower the transition to a sustainable future.

### Secure Reserve Power

Protect your business from unreliable power supply caused by blackouts or planned shutdowns. Our energy storage solutions built on Lithium Ion batteries enable you to secure critical reserve power – with a more attractive CO2 footprint, total cost of ownership, lifetime, and energy density compared to alternatives such as diesel generators or lead-acid batteries.

### Reduce Energy Costs

Polarium's energy storage solutions enable you to cut your energy costs by charging your batteries when prices are low and use the stored power when prices are high. This

way, you avoid spikes in energy prices, reduce grid charges on your bill and prevent costly fuse upgrades.

### Polarium Battery Explained

Polarium Battery can be tailored to your needs. It has a modular architecture, based on common building blocks with standard mechanical sizes, capacities, and a Battery Management System (BMS).

Our products bring unprecedented safety levels. They are designed with five layers of safety, from mechanics to cells. Our BMS controls your battery to ensure that it functions safely, reliably, and efficiently. But not only. The BMS also includes intelligent features that allow you to analyse your battery, receive information about its state of charge and state of health, and manage it remotely.

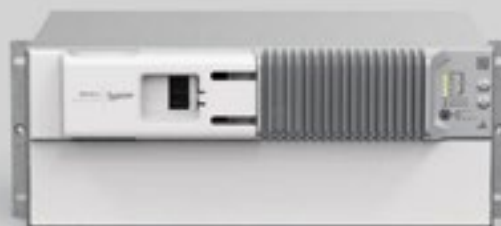
Polarium Battery is easy to install, power up and operate. It gives you full control and needs no maintenance.



### 19"4U 100Ah lithium ion battery

Footprint is designed to directly replace 100 Ah VRLA batteries. Max charge 50 A (charge control will limit without turning off) and max discharge 100 A. Virtually unlimited parallel operation. High energy density battery.

- Compact design in 19" mounting, 4U height and 420 mm depth
- Nominal 100 Ah / -48 V
- Exceptional life; 15 years or 4000 cycles at 80% DoD
- Safe every step of the way – from transportation to implementation and maintenance.



### 19"4U 150Ah lithium ion battery

Optimised for longer backup times. Max charge 50 A (charge control will limit without turning off) and max discharge 100 A. Virtually unlimited parallel operation. High energy density battery.

- Compact design in 19" mounting, 4U height and 578 mm depth
- Nominal 150 Ah / -48 V
- Exceptional life; 15 years or 4000 cycles at 80% DoD
- Safe every step of the way – from transportation to implementation and maintenance.



### 19"4U 200Ah lithium ion battery

Optimised for longer backup times. Max charge 100 A (charge control will limit without turning off) and max discharge 100 A. Virtually unlimited parallel operation.

- High energy density battery.
- Compact design in 19" mounting, 4U height and 560 mm depth
- Nominal 200 Ah / -48 V
- Exceptional life; 20 years or 6000 cycles at 80% DoD
- Safe every step of the way – from transportation to implementation and maintenance.



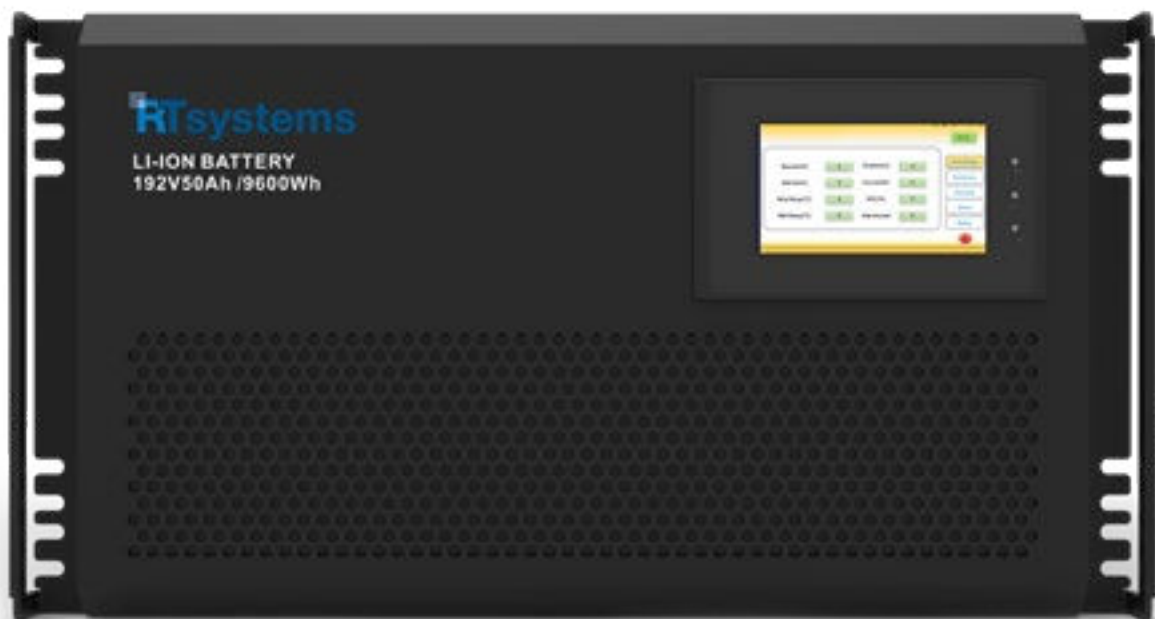
### 19"4U 250Ah lithium ion battery

Optimised for longer backup times. Max charge 100 A (charge control will limit without turning off) and max discharge 100 A. Virtually unlimited parallel operation.

- Very high energy density battery.
- Compact design in 19" mounting, 4U height and 560 mm depth
- Nominal 250 Ah / -48 V
- Exceptional life; 20 years or 6000 cycles at 80% DoD
- Safe every step of the way – from transportation to implementation and maintenance.



## High-voltage Lithium-ion (LiFePO4) Energy Storage System



The RT192V50Ah is a high-voltage lithium-ion (LiFePO4) energy storage system designed for applications such as UPS and solar power. It is part of a scalable, rack-mounted solution.

### Applications

This high-voltage battery system is suitable for high-power applications requiring reliable backup power or energy storage:

- **UPS systems:** Suitable for 5KVA to 10 KVA Uninterruptible Power Supply systems.
- **Renewable Energy Storage:** Ideal for solar and wind power systems.
- **Industrial/Commercial Use:** Used in various industrial and commercial settings where stable and high-capacity power is needed.

### Key Features and Specifications

- **Type:** Lithium Iron Phosphate (LiFePO4) prismatic cells, known for safety and a long cycle life of over 3000 cycles.
- **Nominal Voltage:** 192V.
- **Nominal Capacity:** 100Ah (user specified).
- **Energy:** Approximately 96 kWh
- **Design:** Standard 19-inch rack design for easy installation and scalability.
- **Battery Management System (BMS):** Integrated for independent protection against over-voltage, low-voltage, over-current, and temperature extremes.
- **Communication:** Features RS485 and CAN communication ports, allowing compatibility with major inverter manufacturers.
- **Display:** Includes a 4.3" LCD display for detailed operational status (SOC, RUN, ALM).
- **Maintenance:** Maintenance-free operation.

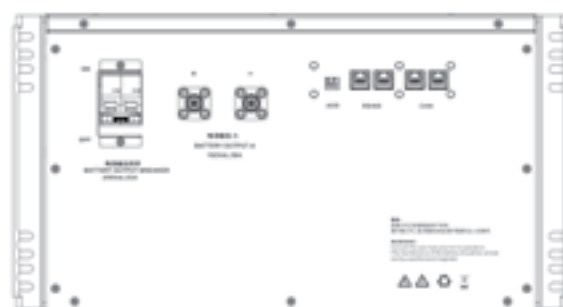




Standard 19-inch rack design for easy installation and scalability.



4.3" LCD display for detailed operational status



Features RS485 and CAN communication ports

## SAFETY

- Long life prismatic LiFePO4 cells, over 3000 cycle life with enhanced safety.
- Multi-level safety protection design. Major parts have UL certification.
- Cell certification: UL1642, IEC62619, GB/T 31484/31485/31486, IS16046(Part 2) / IEC62133-2:2017, JET.
- Battery certification: UN38.3, MSDS.

## SCALABILITY

- Parallel connection for more energy and prolonged backup time.
- Standard 19" rack design, flexible with easy installation.

## DESIGN

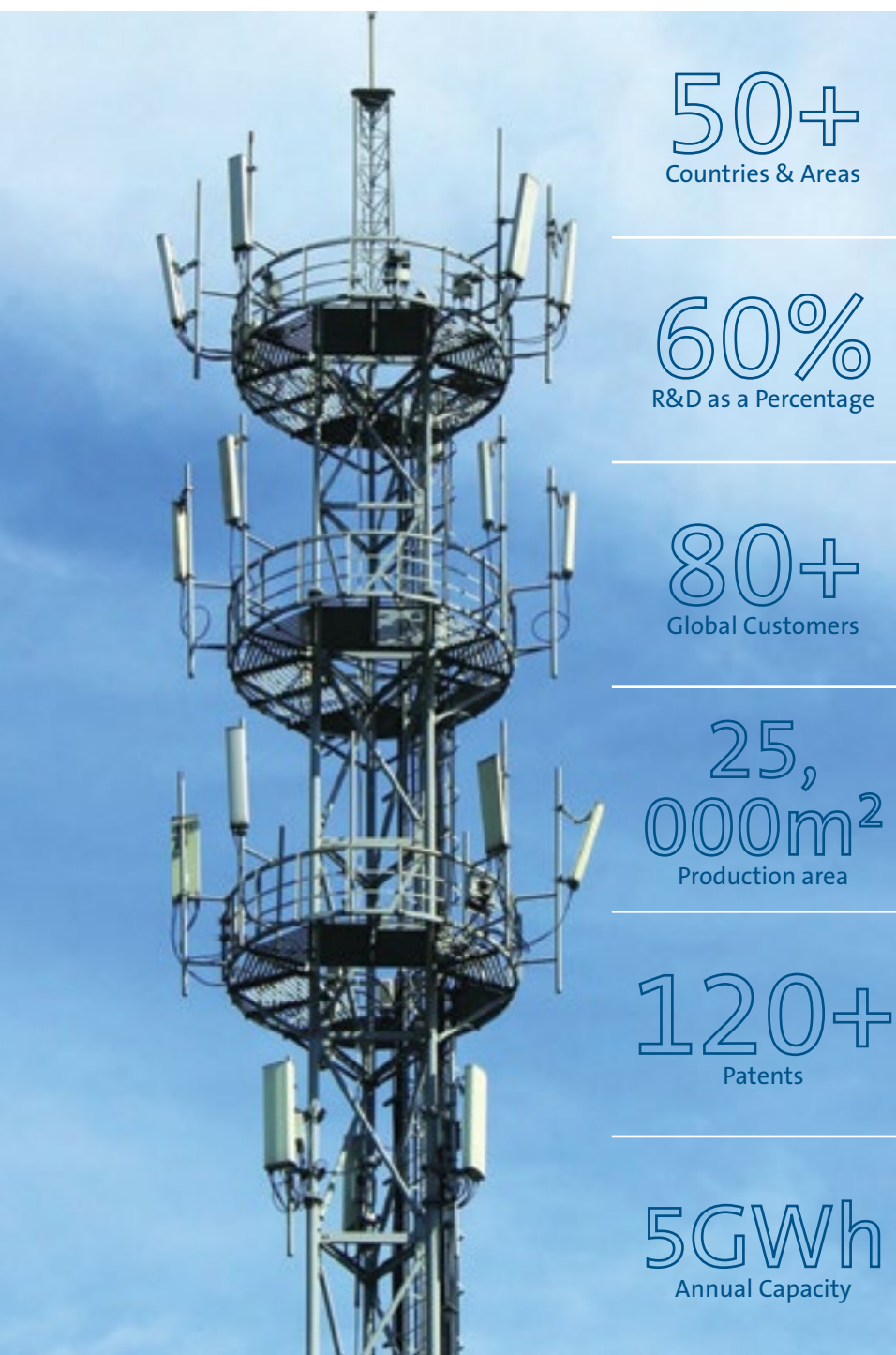
- Suitable for 5KVA to 10 KVA UPS.
- High energy density and fast charge performance.
- Run and Alarm indicator lights and PC software is provided for detailed operation information.
- -20~+55°C wide temperature range.
- Maintenance free.

## BATTERY MANAGEMENT SYSTEM

- Independent protection for charge and discharge.
- Low voltage automatic cut-off function to avoid over-discharge of batteries.
- RS485, CAN communication port.
- Over voltage protection, Low voltage protection, Over current protection, Low temperature protection, High temperature, Short circuit protection.



## Technology-Driven, Innovative Green Energy Solutions



Vestwoods Technology Co., Ltd (Haier Energy) is a technology-driven enterprise dedicated to delivering innovative green energy solutions and services to a global clientele. Anchored in advanced research and development of lithium-ion battery system integration, Vestwoods stands at the forefront of sustainable energy innovation. A company under Haier Energy, Vestwoods serves as a strategic platform in the new energy industry.

Since its establishment in 2016, VESTWOODS has quickly started with overseas business, built manufacturing bases, and gained a leading position in India's telecom backup power market, gradually expanding to Europe, Asia, Africa, and more than 50 countries worldwide. It is currently a GWh-level manufacturing base.

**As a premier provider of distributed intelligent clean energy solutions, we leverage smart energy systems to protect and enhance sustainable living environments.**





Temperature & Voltage  
Self-Adjustment  
Function, prolonging  
service life.



Wide voltage range  
compatible with  
any type  
of inverter.



Plug-and-play  
installation  
saves time,  
installation costs.



Modular  
design, more  
expandable.



## VE51200W

Nominal Energy	10.24kWh
Nominal Capacity	200Ah
Nominal Voltage	51.2V
Operating Voltage Range	42.0V~57.6V
Max. Continuous Current	150A
Ambient Temperature	Charge: 0~60°C Discharge: -20~60°C
Dimension(W*H*D)	530*762*260.5mm
Weight	Approx. 91kg
IP Rating	IP65
Expansion	Max. 15 units in parallel
Cycle Life	6000 Cycles @80% DOD,25°C

## VE48100E

Nominal Energy	5.12kWh
Nominal Capacity	100Ah
Nominal Voltage	51.2V
Operating Voltage Range	42.0V~57.6V
Max. Continuous Current	100A
Ambient Temperature	Charge: 0~60°C Discharge: -20~60°C
Dimension(W*H*D)	440*130*400mm
Weight	Approx. 41kg
IP Rating	IP20
Expansion	Max. 15 units in parallel
Cycle Life	6000 Cycles @80% DOD,25°C



## VT48200B

Nominal Energy	9.6kWh
Nominal Capacity	200Ah
Nominal Voltage	48.0V
Operating Voltage Range	40.5V~54.0V
Max. Continuous Current	100A
Ambient Temperature	Charge: 0~60°C Discharge: -20~60°C
Dimension(W*H*D)	444*221.5*490mm
Weight	Approx. 78kg
IP Rating	IP20
Expansion	Max. 15 units in parallel
Cycle Life	6000 Cycles @80% DOD,25°C





# Super Capacitor Diesel Generator Cranking System

Introducing the Delta designed 12 volt super Cap battery for diesel generator with 48 Volt DC input.

This reliable, green and maintenance free energy storage and power delivery solution, ideal for operation on Telecom sites. The 48V DC provides bursts of current for the DG crank to start and stop. The unit regains charge within a few seconds to provide a second power burst for start up in the event of a failed first attempt.

The battery-less cranking system ensures there is no dependency on mains/grid supply for the Diesel Generator cranking solution.

The main features of the battery-less cranking system includes high power density, a wide temperature range and lasts the life of a Diesel Generator. Cranking reliability is increased in the stop-start process and the unit absorbs power peaks which enhances its life. This light weight solution requires no maintenance and is a green, maintenance free energy solution.



## Advantages:

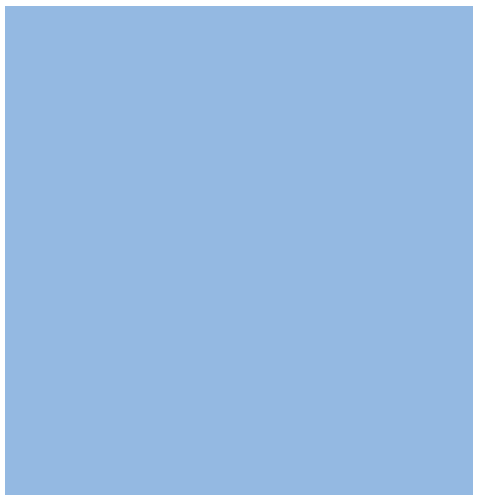
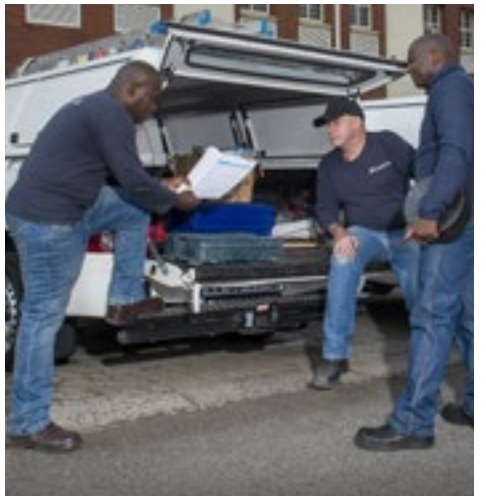
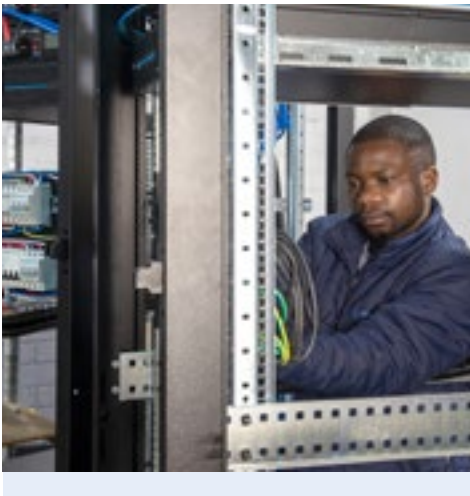
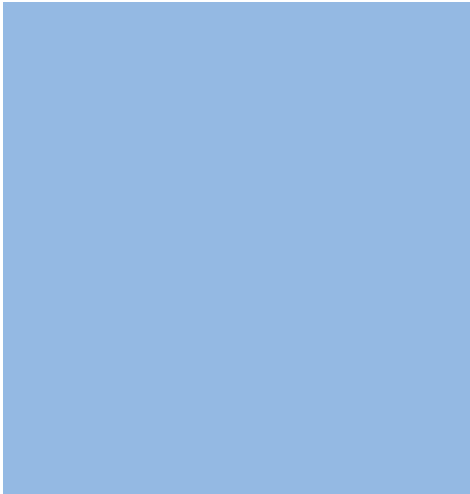
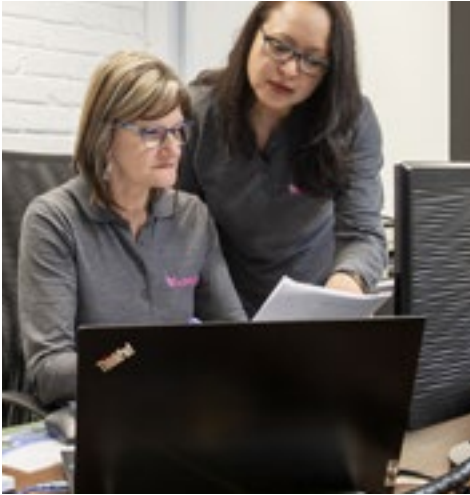
- Input voltage 48 VDC
- Output voltage 12-15.6 VDC
- Zero dependency on grid supply
- Light weight
- Maintenance free
- Longer service life
- Higher recharge efficiency
- Less degradation over thousands of cycles
- Operating temperature -10°C-60°C
- Not suitable for domestic applications reducing the risk of theft

48V  
DC INPUT

12-15.6V  
DC  
OUTPUT

ZERO  
GRID  
SUPPLY





# Generators





# Leaders in the design and manufacture of power technology solutions

We supply HIMOINSA power generation equipment to the international market; generator sets, lighting towers, energy storage and distribution systems. HIMOINSA is part of YANMAR ENERGY SYSTEM (YES), offering a comprehensive power solution to the market.

HIMOINSA Southern Africa provide solutions based, bespoke and turnkey applications for clients across the Southern and East African regions. A One Stop Shop for commercial Generator and Lighting Tower and OEM Parts. From 3kVA to multi-megawatt installations. HIMOINSA Southern Africa has facilities in Port Elizabeth, Johannesburg, Cape Town and Dar es Salaam.

## Technical Services

24/7 support from our fully qualified, nationwide technical team. From project design to installation, commissioning, operation, and service contracts. We can provide fully managed service support agreements or train your technical teams.



**ON SITE POWER**

**Generators for fixed installations. Continuous or backup power, for quick response.**

Generators 8kVA - 1275kVA  
We offer diesel, gas, and hybrid generator sets, control panels, and paralleling systems for standby emergency power, prime power, peak power, and distributed power.



**MOBILE POWER**

**Generator sets, lighting towers, energy storage and distribution systems.**

Lighting Towers included in the range support the necessary specifications for all applications. LED, hydraulic, or manual masts.



**TELECOM POWER**

**Reliable generators with high autonomy, low consumption levels and long service intervals.**

Complex, bespoke solutions for Hybrid plans comprising a combination of Solar, Gas, and Wind. HIMOINSA Southern Africa has the expertise and experience to navigate this space and provide thermal power to several plants across the region. Working in conjunction with our partners to provide long and short-term interim solutions.



## South Africa Project Showcase: Elevating Infrastructure for Financial Institutions and Fibre Companies

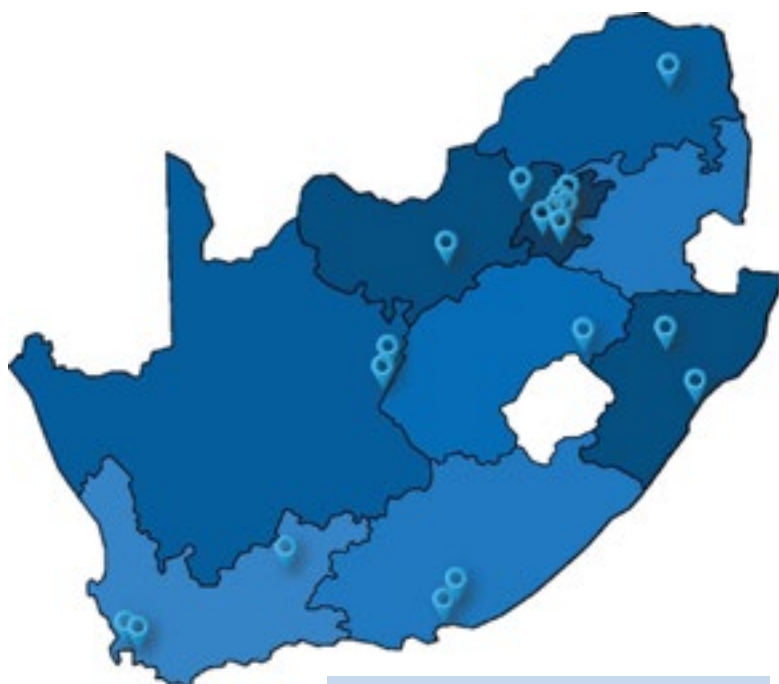
**E**mbark on a journey through our recent projects in South Africa, where we've assisted esteemed banks and fibre companies in enhancing their infrastructure and operational capabilities. Our expertise extends beyond mere generator installations; we design integration site layouts, incorporating wire ways and civil components to optimise functionality and efficiency.

In collaboration with leading financial institutions and fibre companies, we've spearheaded generator installations that exceed standard requirements. Our holistic approach involves not only installing generators but also designing integration site layouts. These layouts are crafted to accommodate wireways and civil components, ensuring seamless operation with minimal interference.



One of the unique challenges we've encountered in these projects is navigating live malls while installing cables. Recognising the critical importance of minimising interruptions, we've implemented stringent protocols and worked tirelessly after hours to complete the projects with minimal disruption to business operations. Our dedication to excellence and efficiency ensures that our clients can continue their operations uninterrupted while benefiting from the enhanced infrastructure.

Through our meticulous planning, precise execution, and unwavering commitment to minimising disruption, we've successfully completed projects for esteemed banks and fibre companies across South Africa. These projects not only showcase our technical expertise but also underscore our ability to deliver innovative solutions tailored to the unique needs of our clients. In South Africa and beyond, we continue to set the standard for excellence in infrastructure enhancement, empowering organisations to thrive in an increasingly connected world.



<b>Sites</b>	<b>40+</b>
<b>Sizes</b>	<b>20kVA – 300kVA</b>
<b>Location</b>	<b>Across South Africa</b>





## Eastern Cape Citrus Farm Project: Powering Agricultural Innovation

Step into the heart of the Eastern Cape, where our team has embarked on a groundbreaking project for a leading citrus farmer. This endeavour encompasses the design and implementation of a state-of-the-art medium voltage generator system, poised to revolutionise the farm's energy infrastructure and propel agricultural operations to new heights.

At the core of this project lies the creation of a dynamic generator system capable of scaling from 1200kVA to 2400kVA, providing ample power to fuel the farm's diverse operations. Operating at 400V, the generated power undergoes a transformation journey, elevated to 22kV through an engineered transformer. This energy is then seamlessly distributed through the farm's microgrid system, ensuring optimal efficiency and reliability across the agricultural landscape.

Central to the success of this endeavour is the comprehensive involvement of our team, from inception to implementation. Every aspect, from designing the earthing system to orchestrating the control system, falls under our purview. With a focus on integration, we seamlessly incorporated solar power from the farm's impressive 900kW solar system, harnessing renewable energy to further augment the farm's sustainability efforts.

Throughout the development process, safety remained paramount. Our team assessed and integrated all safety components, ensuring compliance with industry standards and regulations. From robust fail-safes to comprehensive monitoring systems, every measure was taken to safeguard both personnel and assets.

Moreover, our commitment to excellence extended beyond electrical components to encompass civil infrastructure. Internal to the project, we designed and executed all civil and electrical components, ensuring seamless integration and optimal functionality.



<b>Site</b>	<b>Citrus Farm</b>
<b>Sizes</b>	<b>2 x 630kVA</b>
<b>Location</b>	<b>Eastern Cape</b>



This project stands as a testament to our dedication to innovation and sustainability in agriculture. By harnessing cutting-edge technology and expertise, we've empowered our client to not only meet but exceed their energy needs while advancing towards a greener, more efficient future. In the Eastern Cape and beyond, we continue to pioneer solutions that redefine the intersection of agriculture and energy, driving progress and prosperity in rural communities.





# Accra, Ghana Power and Fuel System Upgrade: Empowering Growth

In 2019, our team embarked on a transformative journey to enhance the infrastructure of a 200kW data centre in Accra, Ghana. From the ground up, we engineered and executed a comprehensive installation of power generators, UPS systems, power trays, and electrical panels. This inaugural stage set the foundation for reliability and efficiency, laying the groundwork for future expansion and innovation.

Fast forward to 2023, and we seized the opportunity to further elevate the system's capabilities. With the addition of a new 1260kVA generator, equipped with state-of-the-art control systems, we propelled the data centre into a new era of power resilience and scalability. Accompanying this enhancement was a robust fuel system boasting a 23,000-liter capacity tank, designed to ensure seamless operation and longevity.



In the process of upgrading the power and fuel system in Accra, Ghana, our team faced the critical task of seamlessly integrating the existing power generator with the newly installed 1260kVA generator. This endeavour required careful planning, precise execution, and a deep understanding of both the old and new systems.

First and foremost, our experts conducted a thorough assessment of the existing power generator, ensuring that it was compatible with the upgraded infrastructure. We analysed its specifications, functionalities, and connections to identify any potential challenges or areas for improvement.

Next, we devised a comprehensive integration strategy that would harmonise the old and new systems seamlessly. This involved updating control systems, reconfiguring electrical panels, and optimising power distribution to accommodate the increased capacity of the new generator.

With attention to detail, our team connected the old power generator to the newly established power control system. This involved rewiring, reprogramming, and recalibrating various components to ensure smooth interoperability and optimal performance.

Furthermore, we conducted extensive testing and validation procedures to verify the efficacy of the



Site	Accra
Sizes	1 x 1260kVA 2 x 360kVA
Location	Ghana
Fuel tank size	23000l

integrated system. From initial power-up tests to comprehensive stress testing scenarios, every aspect of the system was scrutinised to ensure reliability, efficiency, and safety.

Throughout the integration process, our team remained dedicated to minimising downtime and disruption to operations. We implemented meticulous project management practices, coordinated closely with stakeholders, and executed the integration with precision and efficiency.

Upon completion, the integrated power and fuel system underwent rigorous acceptance testing (IST), where its performance and functionality were evaluated against predefined criteria and standards. This final validation step provided assurance that the system met or exceeded expectations and was ready for seamless operation in the data centre environment.

By seamlessly integrating the old power generator with the new infrastructure and completing the system up to IST testing, our team demonstrated our commitment to delivering comprehensive solutions that maximise efficiency, reliability, and resilience. In Accra and beyond, we continue to set the standard for excellence in power and fuel system upgrades, empowering organisations to thrive in an ever-evolving digital landscape.

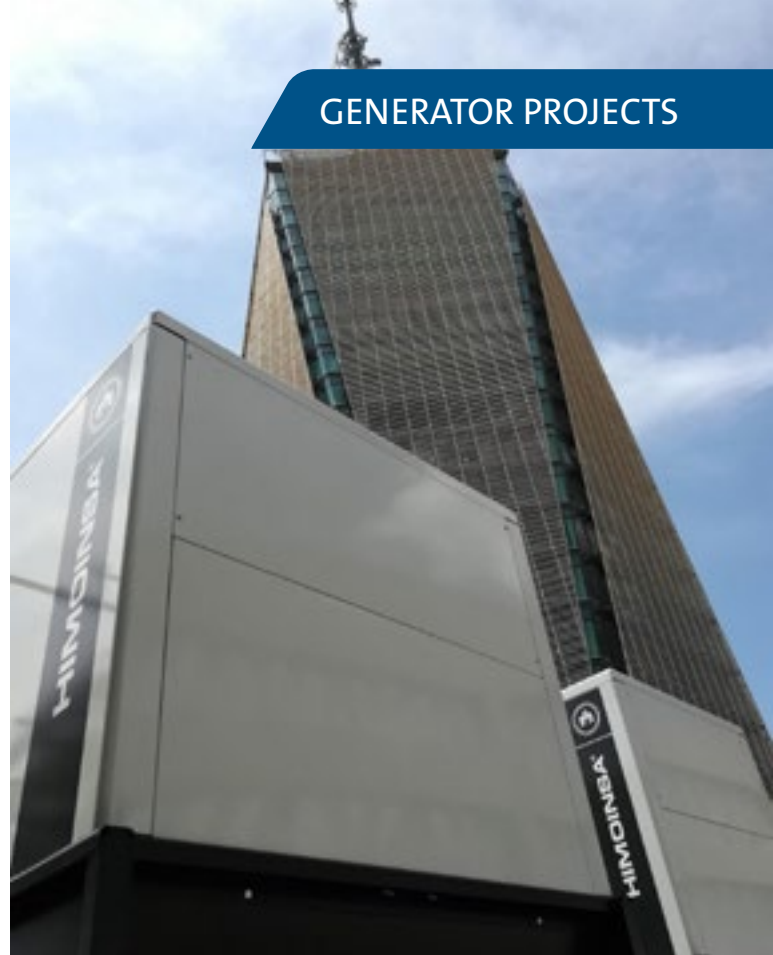


# Kenya Project Highlight: Empowering Nairobi's Infrastructure

**E**mbark on a journey through our recent endeavour in Nairobi, Kenya, where we undertook the installation of two robust 750kVA generators, each equipped with reliable Doosan Engines. Situated atop the tallest tower within Nairobi's bustling parking lot, this project stands as a testament to our commitment to providing cutting-edge solutions in challenging environments.

Our comprehensive approach extended beyond mere installation. We designed a diesel fuel system to ensure seamless operation and longevity. Nestled in the basement, three levels beneath the ground, a substantial 10,000-liter fuel tank was strategically positioned. This reservoir served as the heart of the operation, supplying fuel to the generators situated a staggering 12 stories above ground level.

Crafting such a system demanded intricate planning and precise execution. From determining optimal fuel line sizes to implementing necessary protections, every aspect



was considered. Our team navigated the complexities of transporting fuel from the basement to the towering rooftop, overcoming logistical hurdles with innovative solutions.

In the design phase of the fuel tank system, one paramount consideration was ensuring uninterrupted power supply to the data centre, even under prolonged operational demands. With this in mind, our engineers implemented a strategic plan to facilitate continuous generator operation for a minimum of 72 hours without interruption.

Anticipating the critical nature of power continuity, the system was designed to allow for seamless refilling within a swift 30-minute window. This rapid replenishment capability was essential in sustaining uninterrupted power flow to the data centre, safeguarding against any potential disruptions.

Furthermore, recognising the dynamic nature of technological infrastructure and the need for scalability, our design incorporated provisions for simple expansion. Flexibility was ingrained into the system's architecture, facilitating smooth integration of additional components or increased capacity as the data centre evolves and grows over time.

By prioritising resilience, efficiency, and adaptability, our design not only met the immediate requirements of the project but also laid a robust foundation.



Site	Nairobi
Sizes	3 x 750kVA
Location	Kenya
Fuel tank size	10000l

# Monitoring



SOFTWARE



# The World's Oldest and Largest Manufacturer of Wired and Wireless Sensor Solutions.

When AKCP was founded in the USA in 1981, it opened up a market for data centre power, environmental, and temperature monitoring. AKCP is currently the oldest and biggest manufacturer of networked wired and wireless sensor solutions in the world.

AKCP has led the way in data centre monitoring for over 40 years, introducing environmental and temperature monitoring solutions to the global market. More than 200,000 installations and a line of innovative products, like the Wireless Tunnel™ and sensorCFD, are part of their legacy. Their dedication towards innovation is apparent in each and every product they develop, produce, and evaluate.

As your Authorised Distributor and the primary African Stocking Distributor for AKCP, RT Systems offers both off-the-shelf and customisable solutions.

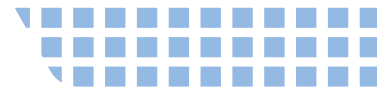


## Simple, Yet Powerful Monitoring

SP1+B comes equipped with 1x intelligent sensor input and 1x dry contact digital I/O a hard wired temperature sensor on 5ft cable, and PoE as standard. Connect AKCP sensors such as temperature sensors, thermal maps and water leak detection. The SP1+B comes with a basic set of software functions, which can be upgraded through a software license. With up to 80 virtual sensors







Monitor temperature front and rear, top middle, and bottom. Check your  $\Delta T$ , humidity, and current consumption. Utilise the dry contact for door contacts, and virtual sensors to monitor third party devices installed in the rack.

With PoE built in as standard, the additional 5VDC USB power input can be used as the primary source of power with PoE as backup power.

## Cost Effective and Versatile Monitoring

SP2+ is compatible with all AKCP sensors, making it an extremely versatile and cost-effective remote monitoring solution. Suitable for small data centre temperature monitoring, refrigerator temperature monitoring.

- IP based, including SNMPv3, HTTPS, VPN
- Send encrypted SNMP Trap and Email Notifications
- Supports 4 Intelligent Sensors or up to 20 Dry Contacts.
- 2x sensor ports enabled by default. Unlock all 4 ports with software license 4PUN
- Optional cellular modem with external antenna
- Optional Expansion Module connectivity
- Virtual Sensors
- Optional Modbus
- Optional Power over Ethernet (PoE)

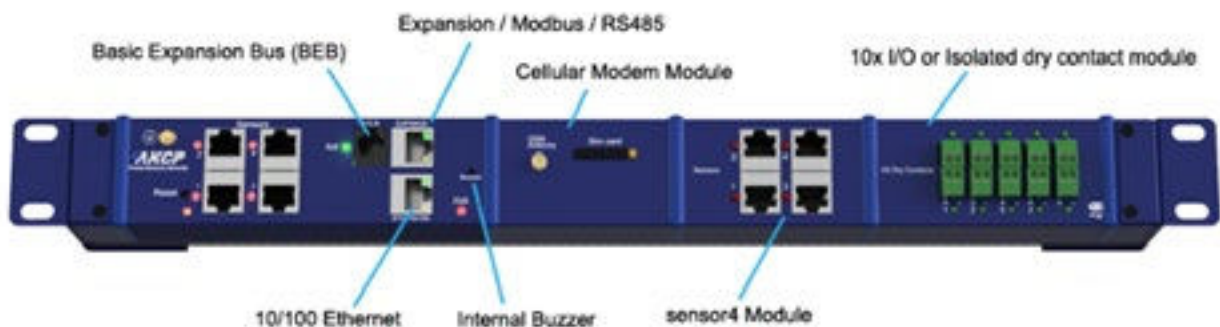


## Build your own customised IP Based SNMP Sensor Monitoring Device

Select from a standard configuration or build your own customised monitoring solution. Choose a mounting option to suit your installation, whether it be 1U, 0U rack mounting, or DIN rail. Optional modules, internal DC power supply, PoE and Cellular modem can be selected depending on your requirements.

The SPX+ is a versatile IP based sensor monitoring device. Connect up to 16 of AKCP's intelligent sensors, 20x dry contact I/O's, 0-5VDC or 4-20mA inputs, control relay outputs and monitor third party devices.

- Equipped with Ethernet, Modbus RS485, EXP and BEB communications.
- Compatible with SPX+ EXP and BEB units, expand the capabilities of your device.
- 1U rackmount brackets, Tool-less 0U mounting or DIN rail mounting options.
- Notification by SNMP, Email, SMS and built in buzzer.
- Start with base configuration and build up your device with modules you need.





# Completed AKCP Projects

## Client: Tier 3 Data Centre – South Africa - National

- Energy Centre Solution
- Monitoring Generators, UPS's, Fire Panels
- Fire Panel
- Measuring Temperature, Humidity
- 500 -1700 Racks / Multiple sites
- Circuit Breaker Status
- Bulk Diesel Tank Levels

## Client: Call Centre – Gauteng, Cape Town, Durban

- Data Centre and Multiple server rooms.
- 10-50 Racks
- Monitoring Generators, UPS's, Door access and Fire panels

- Multiple sites
- Measuring Temperature, Humidity and Leak detection
- Single pane view

## Client: Manufacturing – Gauteng

- Server Room and Warehouse
- Integrated Security Solutions, Camera and Door access
- Monitoring Power
- Leak Detection
- Measuring Temperature and Humidity
- 

## Client -Telco – Multiple POP's

- Monitoring Power
- Leak Detection
- Measuring Temperature and Humidity
- Single rack

## Client Stories

A community church has 7 locations and 400 affiliated churches worldwide. With live broadcasts of services and on-demand replays to their congregation the church has invested heavily in IT infrastructure. A 20+ rack data centre was established which required an environmental and power monitoring system.

### Centralised Monitoring

The data centre is monitored from a central command centre. Large wall mounted displays give insight into the complete view of the Ministries network, video feeds and data centre stats. AKCPro Server DCIM software gathers all sensor data with visual representation, alerts and integration via SNMP to other devices on the network such as server usage and capacity.



### AKCPro Server

AKCPro Server is a best-in-class Data Centre infrastructure Management Software (DCIM). Monitor all your deployed sensors, intelligent PDU's, backup power systems from a single user interface. 3D data centre visualisation, rack mapping, capacity planning, asset tracking and more....

### Custom Dashboards and Gauges

Users can create their own dashboards showing the data relevant to them. Dashboards can be setup as per your specifications with gauges, graphs, system logs, maps and sensor status summary. We include a collection for pre-defined desktop layouts to choose from that can be further customised with a "drag and drop" user interface.

### Wireless Generator Monitoring

As part of a project to monitor remote sites run by a hybrid generator and solar panel system, with an intelligent monitoring solution. The SP2+E interfaced via Modbus to the control panel of the 15KVA generator. Acting as the Modbus Master, the SP2+E polled data on generator runtime, engine speed, oil pressures and fuel levels. The data was transmitted at some sites via Ethernet, and others over a longer distance via LoRa wireless communications.



## Introduction to the TM3

The TM3 range of environmental monitoring systems allow 24/7 monitoring of remote sites. Specially designed for the data centre market, the TM3 will alert the user of any abnormalities.

The TM3 hardware and software has been designed to enable network managers and IT infrastructure managers to minimise system vulnerabilities and reduce the impact of external environmental incidents.

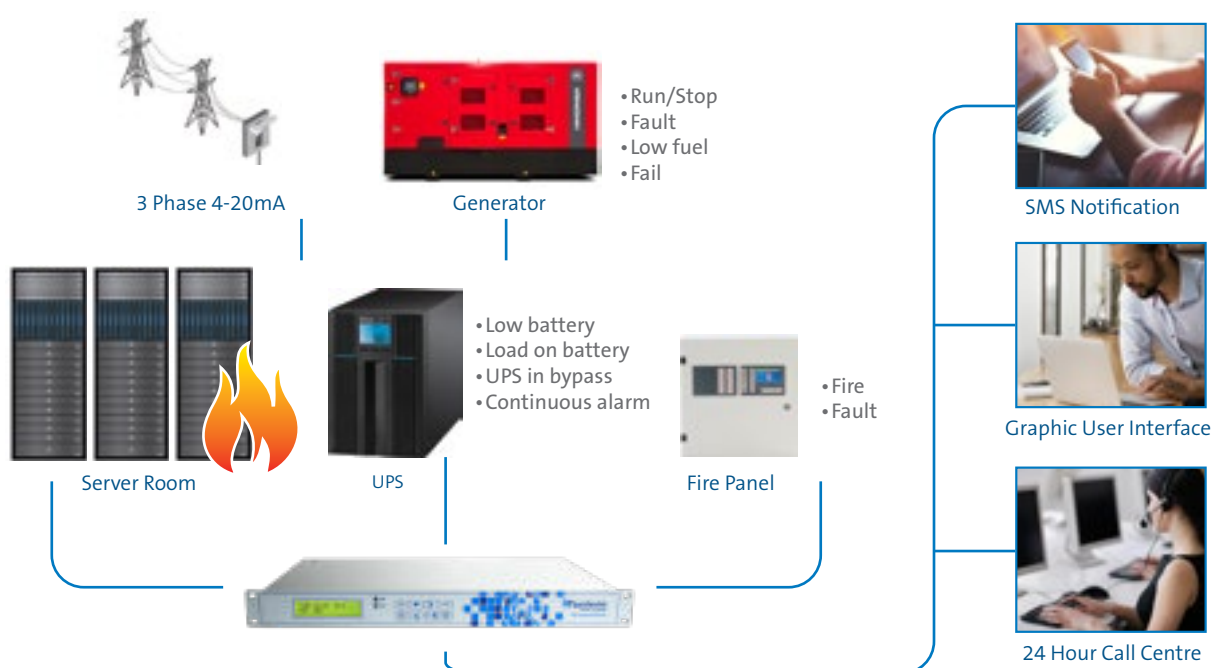
The TM3 will report any alarm monitored immediately, often before the user is aware that the problem exists, and removes the need for constant manual checks by local staff.

The TM3 hardware comes in a 1U 19 inch rack mounted form factor with two variants depending on the alarm

management required. The alerting notifications, depending on the units selected, may be achieved via SNMP trap, email, SMS or a graphical user interface. Offering seamless integration to the most popular network management systems for multiple site deployments.

Designed and manufactured as the most comprehensive environmental monitoring unit in the TM range. The TM3 accommodates a large variety of inputs to ensure full coverage of your data centre.

Built-in battery back-up, informative LCD display and a user-friendly graphical user interface are just some of the features available on the TM3. Alerts and information may be sent via SMS, email and SNMP traps. The software integrated DVR will cover your security needs.



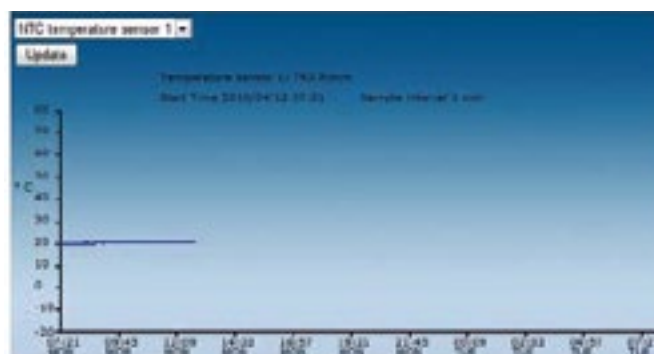
### TM3 unit features

GUI	SMS
SNMP	GSM
Internal back-up battery	Email
DVR	Selftest

### Installation features

Temperature	4
Flood	2
Dry Contact	15
4-20 mA	3
Relays	2
12V DC	2
18V DC	1

The TM3 Monitoring Unit displays and collects numerous types of data which can be viewed on the device's web interface. Data can also be accessed by SNMP and GSM SMS. On the web interface the following data can be viewed:



## Device Configuration

### Data History



## Cameras

## Alarm Configuration

The diagram illustrates the connection of various sensors to a central system. It is organized into two rows of boxes, each containing an image of a sensor and its label. The top row includes a Dry contact cable, a Temperature sensor, a Humidity sensor, a Flood sensor, and a 4-20mA humidity sensor. The bottom row includes a Wireless temperature sensor, a Wireless pressure sensor, a Wireless humidity and temperature sensor, and a GSM Modem. All sensors are connected to a central system represented by a blue box with a USB port and a green LED indicator.

**Top Row:**

- Dry contact cable**: A black cable with a red and white wire.
- Temperature sensor**: A black cable with a small sensor head.
- Humidity sensor**: A green circuit board with a black cable.
- Flood sensor**: A small black device with a USB cable.
- 4-20mA humidity sensor**: A black cable with a small sensor head.

**Bottom Row:**

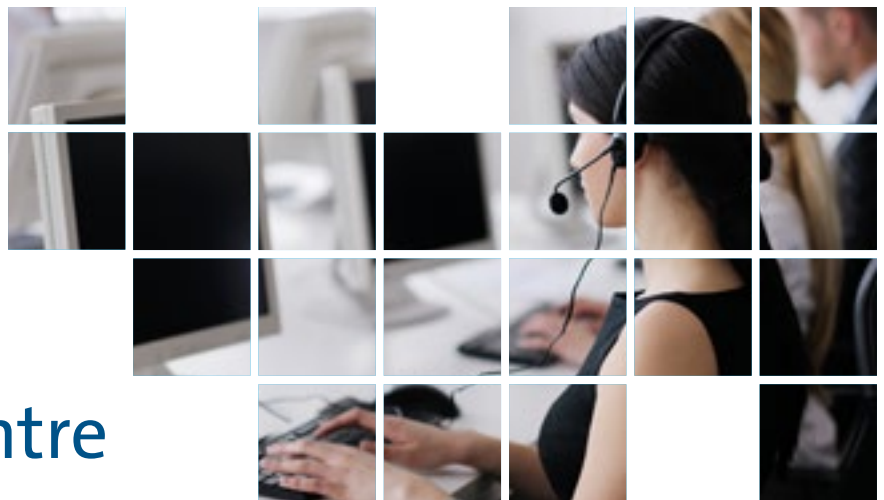
- Wireless temperature sensor**: A black wireless sensor module.
- Wireless pressure sensor**: A black wireless sensor module.
- Wireless humidity and temperature sensor**: A black wireless sensor module.
- GSM Modem**: A blue rectangular module.



# Surveillance Solutions



<b>H.265</b>	H.265 encoding technology, 4K resolution output, power over coax (PoC).
<b>REC</b>	D1 resolution recording. Network Attached Recording (NAS).
<b>HDD</b>	Up to 2TB of recording. 30 days video capture on all channels.
<b>Alarm</b>	Motion Detection, Alarm Inputs, Relay Outputs, System Watchdog.
<b>HDMI</b>	Video outputs: HDMI, VGA and BNC analogue. All concurrently operational.
<b>Dual stream</b>	First stream for high resolution. Second stream for remote viewing applications.
<b>USB</b>	External USB Hard drive back-up. USB mouse optional. Flash stick ready.
<b>Remote access</b>	Remote live viewing, playback, record and configuration. Mobile phone software.
<b>Cameras</b>	Super HAD CCD, Super-High Resolution 540TVL cameras.



## 24 Hour Call Centre

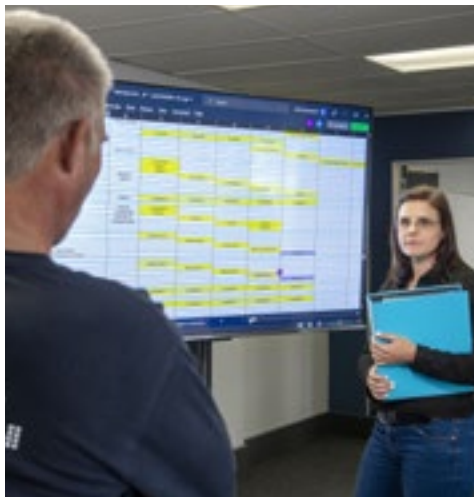
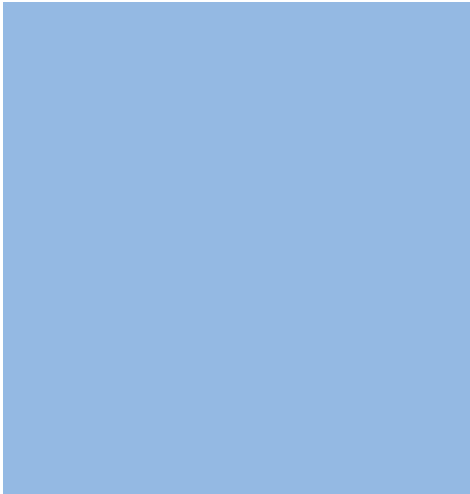
### Monitoring data collection

The objectives of the RT Systems' call centre service is to act as a 24-hour helpdesk or call logging facility on behalf of the client. Call centre staff will log all the related calls on a dedicated software platform and forward them to predefined recipients for processing. The available options will ensure that data will be securely processed and stored on a server in an off-site hosting facility. A standard browser will be used to access and process data.

The 24-hour call centre:

- Independently logs all incoming calls and emails securely and forwards them to the predefined recipients
- Uses a software platform either supplied by RT Systems or the client to handle all the call logging and processing functionalities required
- Securely stores data and makes it available for further processing and reporting from a standard browser.







**Raritan®**  
A brand of  **legrand®**

# Power Distribution Units

 **legrand®**

**AUSTIN®**  
**HUGHES**

**Server  
Technology®**  
A brand of  **legrand®**

# Raritan®

A brand of **legrand®**

## PX4 RACK PDUs

### The Power of Forward Thinking

Trusted by the world's largest data centre operators, Raritan intelligent PDUs benefit from 30+ years of battle-tested engineering and have been perfected by our data centre experts to ensure uptime and availability.

The PX4 builds the Xerus™ Technology Platform by adding industry-proven outlet technology and a set of groundbreaking intelligence features. This combination delivers unsurpassed outlet and power density, flexibility, reliability, security, and accurate data collection.

We understand that rack power needs vary from customer to customer. Our power experts will help you find the right PX4 PDU for your specific application, whether it be a standard configuration model, a configure-to-order model, or by engineering a custom PDU designed to your specific needs.

#### Features

- HDOT Outlets
- HDOT Cx Outlets
- Ramlock Locking Technology
- Alternating Branch Outlets
- 45-Degree Angled Infeed
- R/G/B Led Outlet Indicators
- Bi-Stable Latching Relays
- Colour-Coding Options
- Industrial Grade Mechanical Design

#### Benefits

- Real-time visibility, reporting, and alerting of power metrics and events
- Best-in-class flexibility to meet and anticipate future requirements
- Engineered for mission-critical uptime
- Unsurpassed outlet and power density
- Easy data collection and export to manage energy utilisation
- Secure communication, by default, for all PDU data



## OUTPACE

- High Density Outlet Technology
- C13 and C19 all-in-one outlets
- Alternating branch power distribution
- Outlet and cable locking
- 45-degree angled infeed

## OUTTHINK

- Power quality monitoring
- $\pm 0.5\%$  metering accuracy
- Circuit Breaker Trip Forensics with Waveform Capture
- Fully hot-swappable onboard iX™ Controller

## OUTPERFORM

- Xerus Technology Platform
- Unsurpassed security suite
- Redfish® RESTful API
- Hundreds of catalogued and customisation options



HDOT OUTLETS



HDOT Cx OUTLETS



RAMLOCK LOCKING TECHNOLOGY



ALTERNATING BRANCH OUTLETS

### iX Controller

is the centre of intelligence of the PX4, that houses computing, display, and connectivity ports.

### Advanced Power Quality Monitoring

allows you to proactively troubleshoot sources of power issues and optimise for PUE, CUE, and more.

### Total Harmonic Distortion

measures how much your electrical load distorts your facility's power.

### Circuit Breaker Trip Forensics

determine which outlet and corresponding device cause a circuit breaker to trip.



# Raritan®

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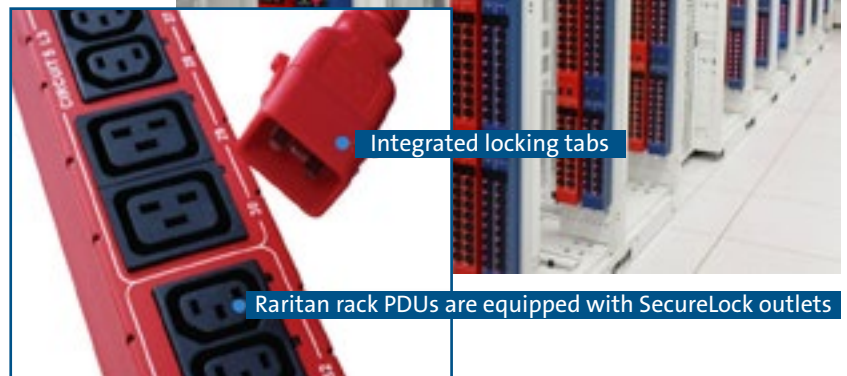
## SECURELOCK POWER CORDS

### Rack PDU Locking Power Cords

IEC outlets often fail to hold plugs as securely as data centre managers would like. Raritan's PX intelligent rack power distribution units (iPDUs) are equipped with SecureLock outlets that work with standard power cords or lock when using SecureLock power cords to prevent cables from coming unplugged.



Prevent costly downtime from accidental power cord disconnects with securelock outlets and power cords.



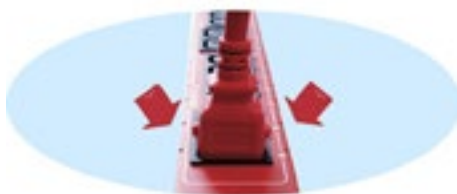
### Easily Identify Power Feeds

Easily identify redundant power feeds to IT equipment to ensure uptime –“A” power feed is red; “B” power feed is blue.



### Prevent Unplanned Downtime

Eliminate the risk of IT equipment power cords vibrating loose or accidentally pulling out when you're working on a rack.



### Map Your Power Chain

Use coloured PDUs and power cords to match the same colour as the entire power chain that supplies power to a rack.

### Faster Troubleshooting

Make it easier to identify power feeds from racks to devices and troubleshoot problems in your power chain.





# LINKEO DATA CENTRE PDUs

## Smart and Basic PDUs for Data Centre applications

From Basic to Switched solutions, this PDU line has been carefully designed to adapt to the diversity of our customers' configurations. Developed on a common platform, it provides solutions that fit your current needs and expectations, while anticipating for maintenance as well as future scaling and upgrades. Depending on your needs, here is an overview of possible configurations:



<b>SWITCHED PDU</b>	<b>HD METERED PDU</b>	<b>METERED PDU</b>
CONTROLLER YES: Node / NO: Base	CONTROLLER YES: Node / NO: Base	CONTROLLER YES: Node / NO: Base
<b>HD BASIC PDU</b>	<b>BASIC PDU</b>	<b>HD BASIC PDU</b>
WITH LPMM	WITH LPMM	<b>BASIC PDU</b>

- Providing accurate monitoring
- Improving uptime
- Facilitating deployment and maintenance
- Expanding functions from basic to intelligent



330° rotating input cord



Hot swappable controller architectures



High-density outlet modules



Cord locking system



Numbered outlets



PDU Colour-Coding



# RACK PDUs

## The Rack PDU For All Your Data Centre Needs

### Shaping the Future of Rack Power Distribution

Leaders in rack power distribution units for nearly 40 years, Server Technology PDUs are the choice for Fortune 100 companies to technological startups. Our passion is to push back the boundaries of Rack PDU technology and deliver

groundbreaking innovations in hardware and intelligence such as the High Density and Cx (two-in-one) outlets.

Trusted by the world's largest data centre operators, Server Technology

Rack Power Distribution Units' innovative design combines over 30 years of battle-tested engineering and intelligence with industry-proven hardware and software to deliver unparalleled visibility, flexibility, density, and security.

### Server Technology PDU Families



### Choose the Right Rack PDU

	Per Outlet Power Monitoring	Branch Circuit Protection	Input Current Monitoring	Environmental Monitoring	Access, Security & Comms	Expansion Module	Individual Outlet Control
Switched POPS - Per Outlet Power Sensing PDU	•	•	•	•	•	•	•
Smart POPS - Per Outlet Power Sensing PDU	•	•	•	•	•	•	
Switched PDU		•	•	•	•	•	•
Smart PDU		•	•	•	•	•	
Metered PDU		•	•				
Basic PDU		•					



## INFRAPOWER RACK PDUs



The InfraPower standard PDU range are either vertically or horizontally rack mounted units. Available in IEC, BS (UK), Schuko and Nema power socket form factors with a wide range of plugs with appropriate current ratings. Horizontal PDUs are supplied with end caps/mounting brackets and the vertical units are supplied with both a vertical mounting button (VMS) for quick installation or a vertical mounting bracket (VMB). Furthermore the InfraPower PDU range is manufactured from extruded aluminium for strength and flexibility

in design accommodating multiple socket sizes.

All PDUs are supplied complete with green power-on LEDs and the appropriate resettable fuses. Vertical PDU circuit breaker protection is also available as an optional extra.

### InfraSolution®

Our InfraSolution® product enables data centre operations managers, IT administrators and facilities managers to enhance rack level security and

equipment efficiency by using remote rack IP door access with swipe card control, temperature and humidity monitoring.

InfraSolution is designed to allow cabinet control and monitoring of door handles, switching and monitoring of SmartPDUs as well as control of InfraCool fan units, temperature and humidity for up to 200 cabinets over either a local area network or a wide area network. The web-based GUI (Graphic User Interface) management software

**Remote Management Over IP**

PDU remote management helps reducing manpower and hence improving uptime and productivity. It also benefits users with capacity planning and increasing the overall efficiency of the data center. InfraPower intelligent PDU offers 3 kinds of remote management solutions for users' selection.

InfraPower®  
IPM-04

Free Download

InfraPower®  
GUI

Built-In

3rd Party  
DCIM

via SNMP / API



InfraCool fan units



SmartCard handle

allows up to eight simultaneous users to access and control different cabinets.

There are two InfraSolution 'in the box' options, the InfraBox 820 and the InfraBox 840.

The 820 package includes two (front/rear) SmartCard electromagnetic rack handles/cable harnesses and two SmartCards. The InfraBox 840 package has all the 820 features plus an additional 8 X RJ45 expansion ports that allow the user to control or monitor SmartPDUs and/or control InfraCool fan units via a Cat6 cable. Typically you can monitor PDUs amperage as well as remotely switching power sockets on and off via IP using the same GUI software. There are also 2 X RJ11 ports that provide an interface for digital temperature and humidity sensors.

## SmartCard handle

The SmartCard handle is designed for



InfraPower® rack intelligent PDUs provide connection ports for PDU daisy chain. To daisy chain units, each PDU can simply be connected in series to the next by Cat5/6 cables. With the Dual Lan PDU IP Dongle (IPD-03-S), up to 32 daisy chain levels can be achieved. Single & Three Phase PDUs can be inter-cascaded in a single daisy chain.

use with either inductive, mechanical or optical door opening/closing sensor and the SmartCards themselves can either be HID or Mifare compatible. It is also compatible with enclosure industry standards in terms of its footprint and mounting dimensions enabling retrofitting to most existing enclosures. The handle has a built in digital temperature sensor and for

security back up it is supplied with mechanical keys.

To complete the package Austin Hughes offers a standalone system including a Matrix Server and an IP extender. This allows the user to remotely access the InfraSolution network independently of the main operating system.



# Software

 **DELTA**  
**InfraSuite**

 **Sunbird®**

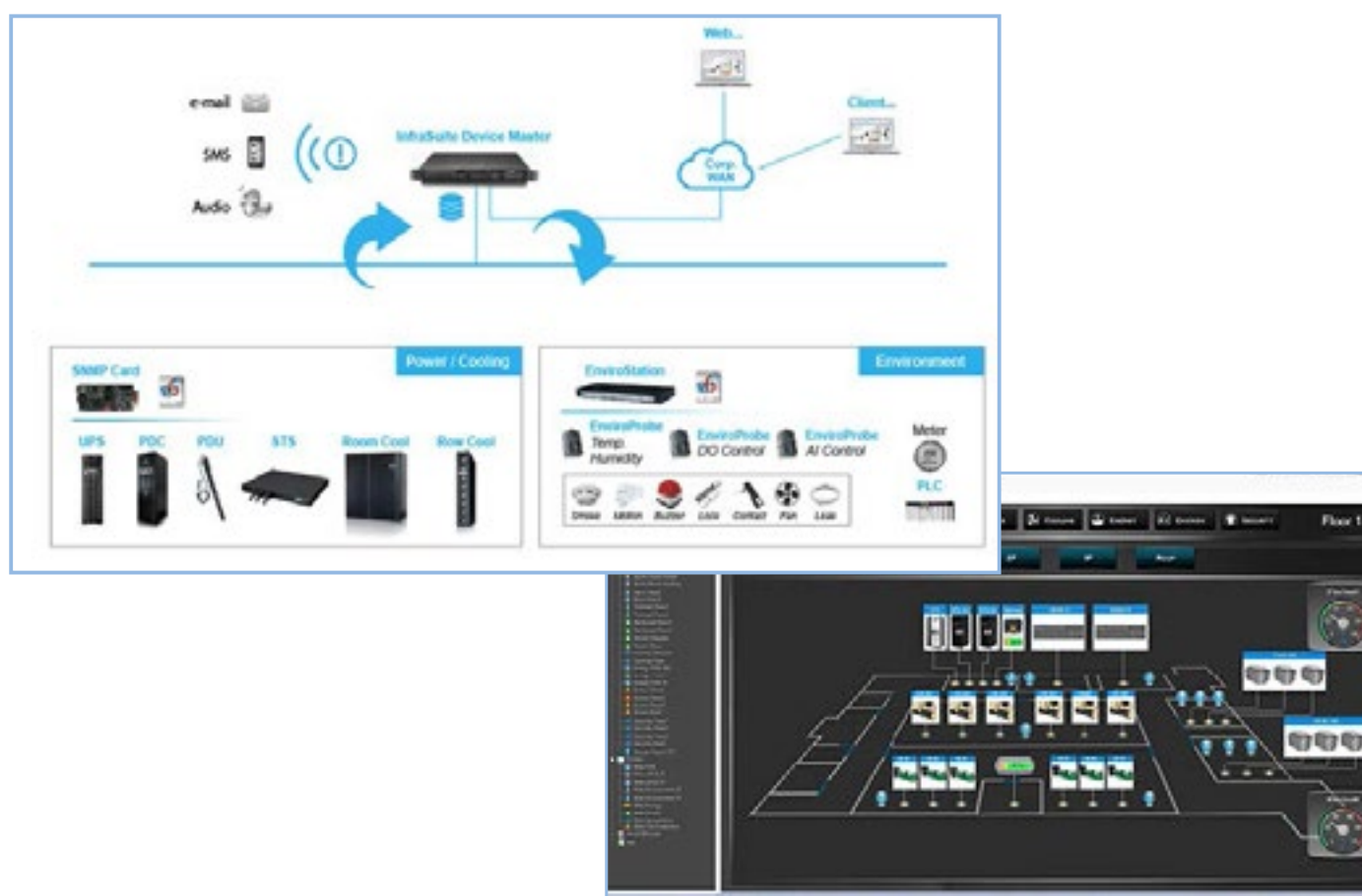
 **nlyte Software**

**TRIDIUM** 



## Delta Infrasuite Device Master

- Observe the status of all devices, query event logs or history data, and assists users in taking appropriate action
- Pre-built integration files for Delta equipment makes for easy deployment
- Customisable Navigational Graphics
- Scalable across multiple sites



## Completed Infrasuite Projects

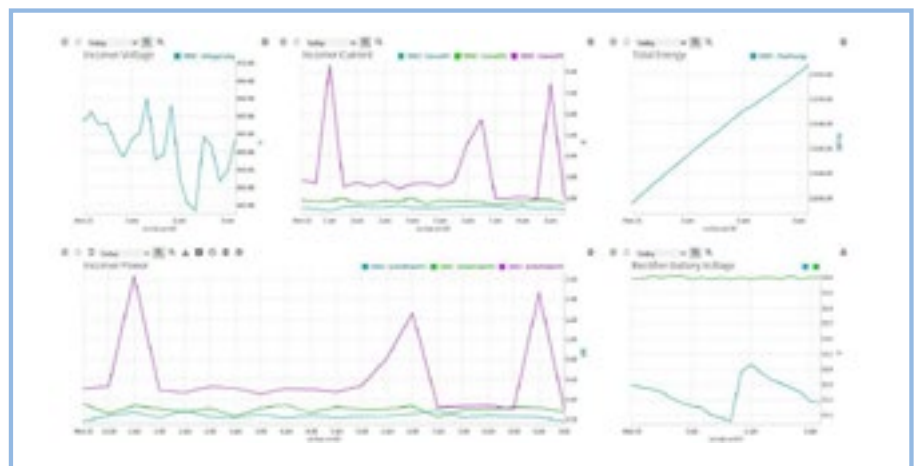
- University Campus - Network Switches UPS Monitoring
- Agricultural Plant - UPS and PDU Monitoring
- Municipality Building - Computer Room, UPS Racks, PDU Monitoring



## Tridium - BMS Software

- Multi-Site Monitoring from Single Pane of Glass
- Multiple Protocol Support
- Real Time Alerting via WhatsApp, Telegram, Email, SMS
- Visualisation of Trends, Analytics & Reporting

Tridium is the developer of Niagara Framework® — a comprehensive software platform for the development and deployment of connected products and device-to-enterprise applications. Niagara provides the critical device connectivity, cyber security, control, data management, device management and user presentation capabilities needed to extract value and insight from real-time operational data. Tridium has built Niagara Framework on open-protocol standards, and it has brought it to market with an open distribution model. This open approach is core to Tridium's success. Today, there are over one million instances of Niagara at work in hundreds of thousands of projects worldwide. And, the large Niagara Community of customers and development partners is continuously at work improving our platform and expanding its scope. Our solutions allow diverse monitoring, control and automation systems to communicate and collaborate in buildings, data centres, manufacturing systems, smart cities and more. We create smarter, safer and more efficient enterprises and communities by enabling data-driven approaches to improving energy performance, indoor air quality and comfort.

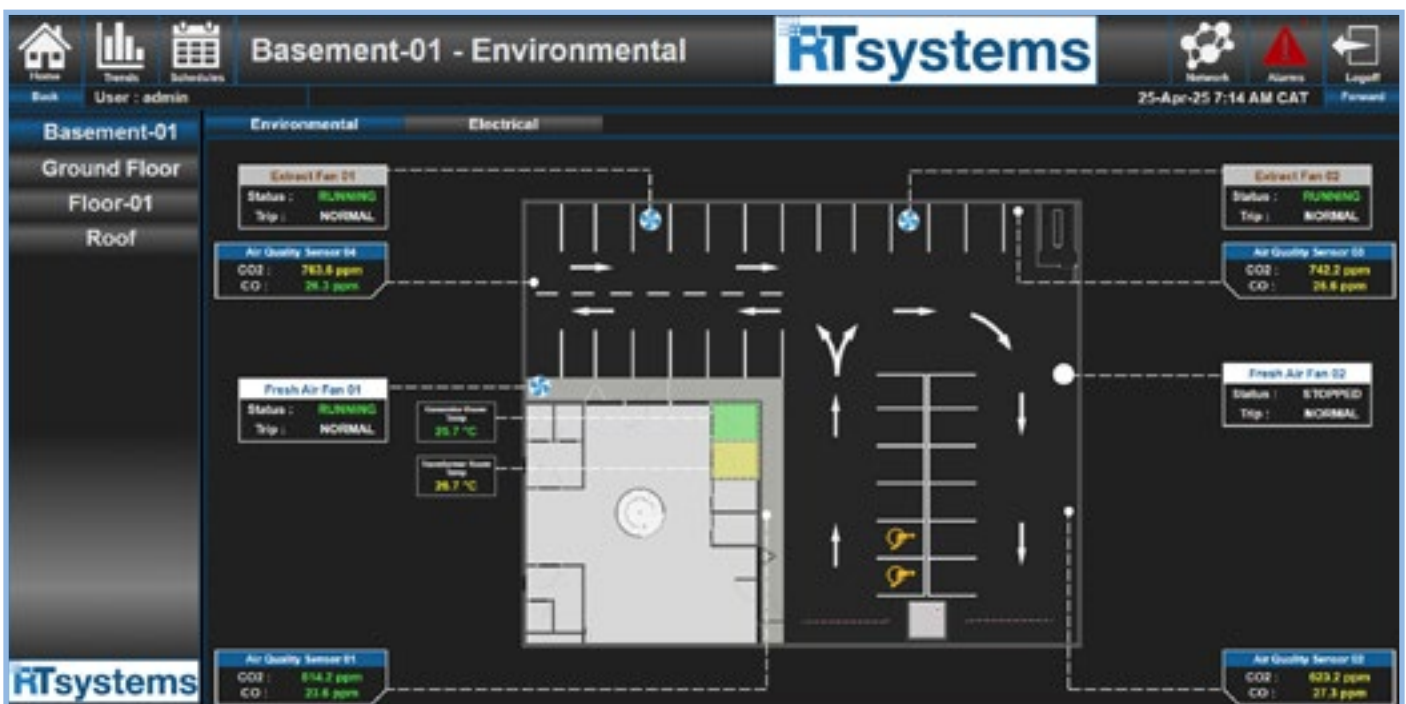


## Niagara Framework Easily Connects Intelligent Systems

Niagara Framework® is a comprehensive software infrastructure that addresses the challenges of creating device-to-enterprise applications. It serves as a central console for connecting real-time operational data to the people and systems that manage workflows in smart buildings, data centres, industrial processes, smart cities and other aspects of business enterprises.

Niagara provides the critical, cyber-secure device connectivity and data normalisation capabilities needed to acquire and unlock operational data from device-level

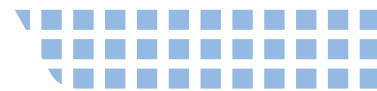
and equipment-level silos. The control engine at the core of Niagara enables users to not just monitor data flows, but to create logic sequences that effect controls programming based on data observation. Systems integrators use the data management and user presentation applications built into Niagara to manage histories, schedules and alarms. They can create custom user interfaces for end users with the tools built into Niagara, or purchase graphical UI templates and components from the many Niagara partners that specialise in graphics and dashboarding.



## Completed Tridium Projects

- Telecoms POP Sites - Nationwide
- LoRa WAN Deployment - Water Park Pump Room Monitoring
- Data Centre Equipment Monitoring
- Electrical Metering for Student Accommodation





## POWER IQ® + DC TRACK DCIM MONITORING SOFTWARE



### Easily Manage Data Centre and Facility Energy, Power, and Environment

In today's data centre, being efficient with power and cooling resources is almost as important as maintaining uptime. Sunbird's Power IQ® (PIQ) software provides the information and controls you need to fully utilise your existing infrastructure resources while alerting you to trouble before it causes downtime.

PIQ software can be easily deployed as a standalone DCIM monitoring solution or with Sunbird's dcTrack® DCIM Operations to provide full asset and change management. PIQ functionality scales to meet enterprise needs, allowing you to securely monitor all your data centres and labs, including your Busways, CRACs, UPS, PDUs, RPPs, Meters, Branch Circuits, Racks, Rack PDUs, Environment Sensors, IT Devices, and Electronic Door Locks — all from a single web browser.

PIQ is vendor neutral and automatically supports all major manufacturers. You can easily add support for any other manufacturers with our dynamic plugin capability.

### Make informed power and capacity planning decisions

PIQ software tracks actual power load of IT devices under computing stress, providing more accurate planning information.

- Find Stranded Power Capacity

- Newly found capacity delays expensive capital expenditure.
- Project Future Power Capacity Needs — Trending and days of supply projections enable accurate forecasting.
- Monitor UPS Capacity and Battery information — End-to-end monitoring easily prevents potential over-capacity situations.

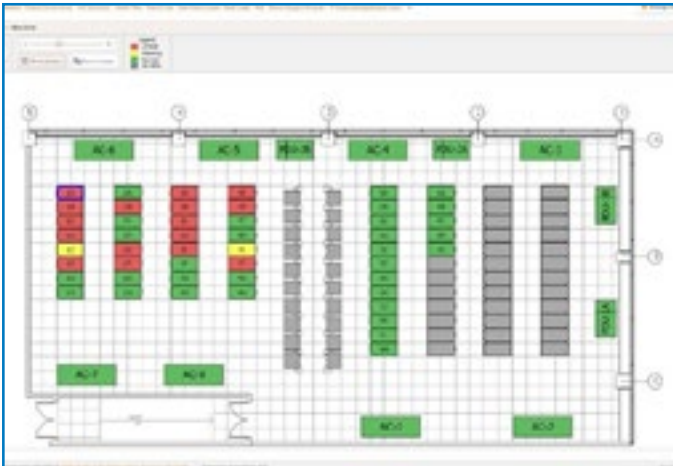
### Utilise power and cooling resources efficiently, improve PUE

PIQ software automatically collects power and environmental data from sensors.

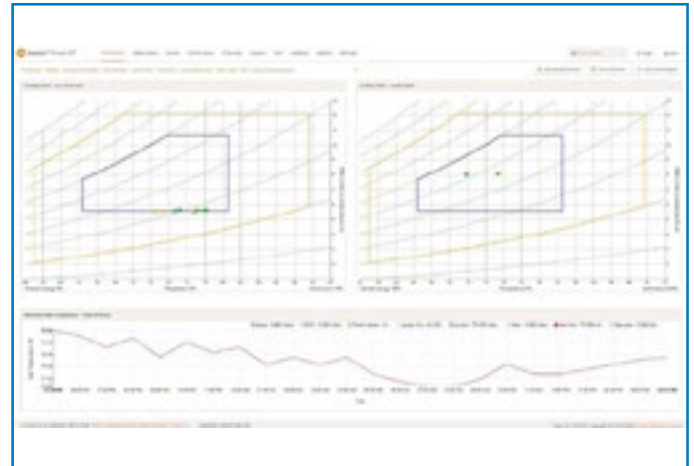
- Leverage Free Cooling — Patented Electronic Psychrometric Cooling Charts help you keep cabinets in the ASHRAE® allowable environmental ranges for potential cost savings.
- Identify and Eliminate Ghost Servers — Scheduled email reports pinpoint ghost servers for consolidation.
- Bill Back Energy Costs Based on Usage — Automatically generated bill back reports drive better behaviour.

### Asset Management

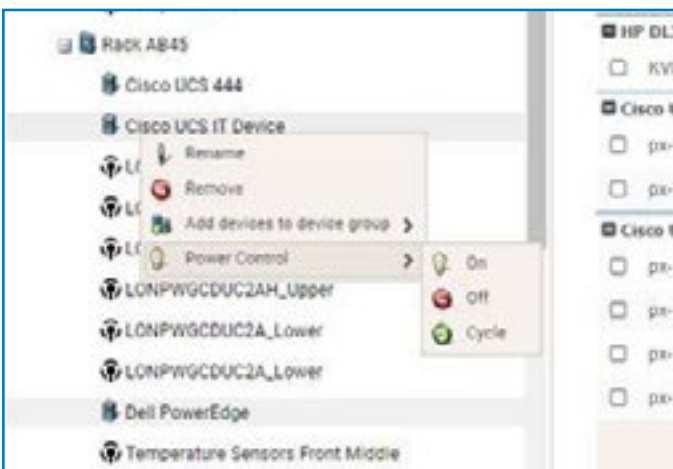
- All data centre physical assets and their configuration
- Maintenance/lease information
- Add unlimited Custom Fields
- Models Library with over 40,000 smart models across 1,280 manufacturers



HEALTH MONITORING



AVOID HOTSPOTS AND OVERCOOLING



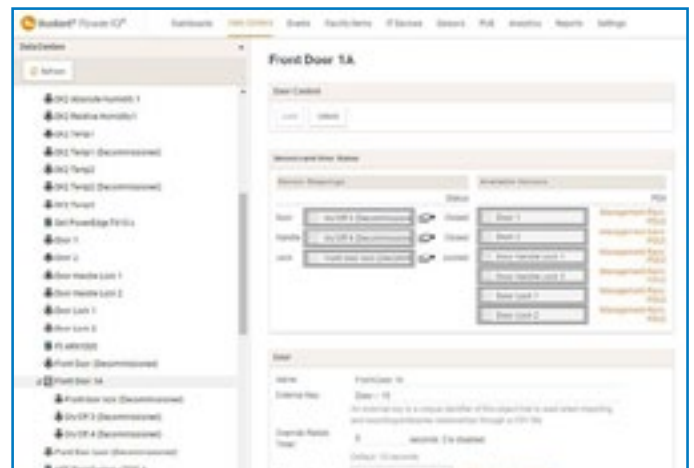
POWER CONTROL WITH OUTLET GROUPING



POWER USAGE EFFICIENCY (PUE)



HEALTH TILES DASHBOARD FOR MULTIPLE SITES



ELECTRONIC ACCESS SECURITY MANAGEMENT

# Completed Power IQ Software Projects

- First National Bank
- Paratus Telecoms
- HCL



# Data Centre Infrastructure Management (DCIM)

Optimise your Critical Infrastructure, from Data Centre, Colocation, Hybrid Cloud to Edge Computing



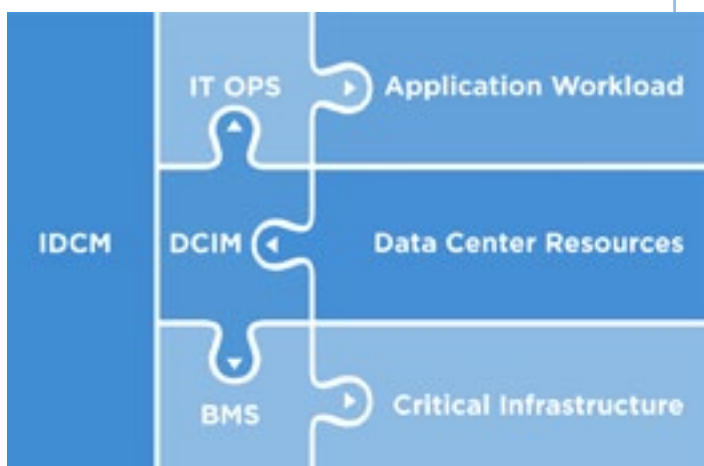
## Data Centre Management Software and Hybrid Cloud Management Initiatives

Enabling and Managing IT Solutions Everywhere...Nlyte has software solutions to help you manage your Hybrid Infrastructure...hardware, software, energy...data centre, colocation, cloud

Optimisation of Infrastructure and workloads

- Asset Lifecycle Management
- Power and Space Capacity Management
- Workflow Automation
- Single source of data for business systems and teams
- Security, risk, audit, compliance, and reporting.





## Integrating Building Automation Controls with DCIM software to more efficiently control the Data Centre's Critical Infrastructure.

- Monitor end to end telemetry points to predict and optimise power and thermal efficiencies
- Reduce disruptions from maintenance cycles
- Predict and avoid unplanned outages
- Optimise application workload placement

## Usage cases:

- Hybrid Infrastructure Management
- Workload Optimisation
- Edge and lights out infrastructure management
- Asset lifecycle management
- Technology refresh, migrations, and consolidations
- ITSM change management
- Desktop / Laptop software audit and compliance
- Automation
- Cost savings and ROI improvement
- Operational efficiency
- SLA management
- Risk Reduction and compliance
- Chargeback and cost allocation
- CMDB integration
- Bi-directional communication with facilities, IT, and business systems
- Workflow efficiency and resource cost reduction
- Power monitoring
- Cooling management
- Power failure simulation and prevention
- Energy capacity planning
- Energy optimisation and cost reduction
- Branch circuit monitoring
- Capacity planning
- Predictive maintenance

## Completed Power Nlyte Software Projects

- JSE
- Discovery





# Portable Facilities Cabinet

## Portable Facilities Cabinet (PFC)

The Portable Facilities Cabinet (PFC) is a cost-effective self-contained data centre solution in a box. A simple, versatile solution that obviates the expense and logistical nightmare of a server room construction for remote sites, easy to deploy. This is a quick, versatile solution that can be prepackaged prior to system installation.

All client equipment testing can take place under controlled conditions before the module is dispatched to the remote location for 'plugging in. This new flat pack data centre in box solution come standard with the following:  
4 KW aircon rack Mount, Uninterrupted Power Supply System (spec to client's specification/requirement), Rack Mount Fire Suppression, Access Control System and Environmental Monitoring System.

### Add-On Items:

#### **PDU (Power Distribution Unit):**

- Surge & lightning protected inputs

#### **Access Control :**

- 3 Point Pin Locking systems with remote management capability.
- Biometric Access Control system with finger readers and maglocks

#### **Environmental Monitoring System:**

Monitoring / moisture detection & cabinet temperature  
Wireless GSM telemetry Communications – can operate if Network fails.  
Web-enabled options and Web-cam options

#### **Air-conditioning Cooling System:**

Internationally proven equipment. Practical design – no hazard to User equipment. Up to 6kw per unit.

#### **Fire Suppression System:**

Dual detector operating principle, aerosol fire extinguisher.

#### **UPS System/s:**

Internationally proven equipment, from 1kva up-to 15 KVA  
Modular battery options available.



- Robust construction
- IP 55 rated weatherproof enclosure for most environments
- Small footprint area
- 360° access to cabinet
- Easily portable between sites
- Maximum user space in cabinet – 82%
- Weight(empty cabinet) = 300KG
- Dimensions : H: 2200mm, W: 850mm, L:1000mm

### Benefits of the PFC Solution:

- Flexible facilities solution
- Reduction in maintenance
- Limited administration requirements
- Portable from leased locations
- Reduction in space requirement
- Offers a complete pro- active monitoring system
- Self-contained facilities system
- Caters for remote locations
- Very cost effective

# Blanking Panels



**PLENAFORM® SYSTEMS**  
KEEPING DATA CENTERS SIMPLY COOL™

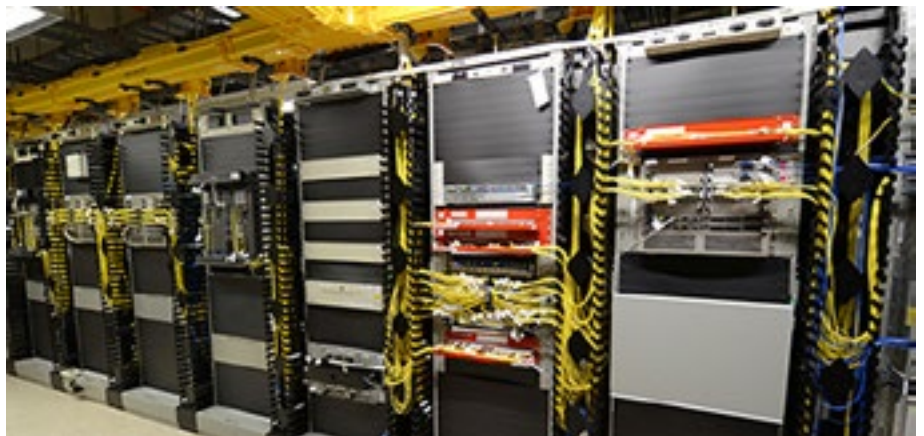


**PLENAFORM® SYSTEMS**  
KEEPING DATA CENTERS SIMPLY COOL™

## PlenaFill 27 U Blanking Panels

According to industry standards best practices, installing blanking (filler) panels is the simplest and most effective means to control air flow in a data centre or containment system. Panels cover unused rack space in unoccupied server and equipment racks and stop hot aisle air from coming into the front of the rack and mixing with the cold aisle air. Stopping hot air from recirculating back to the front of the rack reduces the overall air intake temperatures, which also helps prolong equipment life. Large sections of unused rack space can be blanked out in seconds.

Installing PlenaFill blanking panels is a simple solution that can be implemented in any data centre at a very low cost. Power consumption is increasingly important to IT managers because they want to use their budgets most effectively, and electricity is a large portion of the overall budget. PlenaFill 23" and 19" blanking panels can also be installed together in network equipment racks that have 23" to 19" reducing brackets.



### Features & Benefits

- Scalable panels significantly reduce time and labor cost associated with installation.
- No need to use separate filler panels for each rack manufacturer; works well in a multi-vendor environment.
- Rack units not lining up? PlenaFill can be cut to fill spaces less than 1 U and fits behind face plates.
- U's are perforated for easy separation.
- Servers operate at cooler temperatures by filling large sections of unoccupied rack space to control air flow.
- No panel assembly, cage nuts or grommets required.
- Thin, flexible and particulate free.
- Stops server exhaust air recirculation — Operating costs are lowered.
- Fits snugly against EIA rails.
- Lightweight material = less freight cost.
- Stores flat = less storage space needed.
- Non-Conductive, non-hygroscopic, inert.
- UL94 V-0 electrical insulating material.





# Transfer Switches



**Raritan®**  
A brand of  **legrand®**

**AUSTIN®**  
**HUGHES**



## Rack-Mount Static Transfer Switch



### Highly reliable power redundancy for mission critical IT equipment

The Rack-Mount Static Transfer Switch (rSTS) safeguards the uninterrupted operation of mission critical IT equipment. Powered by two independent power sources, the rSTS rapidly switches from one source to the other automatically when the power supply used to power its connected load fails. For data centre applications the rSTS allows power drop risk to be shared or distributed to each rack to prevent power loss for the whole system. The rSTS offers an efficient and reliable switch that supports the high redundancy requirements of mission critical power systems.

### BENEFITS & FEATURES

#### Availability

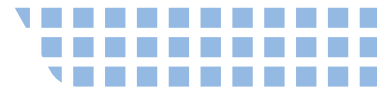
- Adopts SCR with a relay in parallel as a switching device to increase reliability without sacrificing efficiency
- Supports power redundant configurations for high reliability
- Monitors the health of the power source and performs the transfer automatically

#### Convenience

- Rack-mounted type with 1U size for easy installation and relocation
- Built-in SNMP for remote management
- LED indicators show power flow
- Self-test function

#### Safety

- Break before make prevents short circuits between two sources



## Rack-Mount Automatic Transfer Switch

Most data centres provide power source redundancy in order to ensure critical devices have no power related downtime. Many rackmount IT devices, however, are not designed to take advantage of power redundancy. For single-corded devices, ATS is a perfect fit to provide power failover. Intelligent ATS (iATS) also allows user to switch power input over IP, and provides real time power monitoring and helps users with power capacity planning.

Automatic Transfer Switches (ATS) provide fail-safe power redundancy. A rack ATS has dual input power cords supplying power to the connected load. If the primary power source becomes unavailable, the rack ATS will seamlessly source power from the secondary source without interrupting critical loads.



### KEY BENEFITS

#### Input Switching Locally or Remotely Over IP

Local power input switching is essential, especially for conducting maintenance in the data centre. Alternatively, InfraPower® intelligent ATS enables users to switch power input over IP, saving manpower and providing a prompt way to switch power input.

#### Power Redundancy for Single Corded Devices

For single-corded devices, InfraPower® intelligent ATS is a perfect fit to provide power fallback. It includes dual power inlets, for connection to both a primary power source and a redundant, secondary power source.

#### Auto Switching Relay for Seamless Power Transfer

InfraPower® intelligent ATS offers a simple but reliable solution for automatically sensing power loss and seamlessly switching to a secondary power source. The power source transfer time is seamless to the connected equipment, making sure that the switching occurs safely between the two input power sources. After switching to a backup power source, it can also

switch power back to the primary input after power has been restored.

#### Remote Monitoring Over IP

InfraPower® intelligent ATS provides a real time monitoring on Amp, Volt and kWh. Hence, it helps users with capacity planning and improving the overall power efficiency of the data centre.

#### Models with Outlet Switching plus Outlet Monitoring

Both WS & WSi ATS series allow outlet switching on / off remotely over network IP, whilst WSi provides outlet monitoring features.

#### Extensive Selection & Quick Delivery

The leading edge ATS solution provides the widest range of configurations with shortest lead-times in the market : It offers 110V / 208V / 230V models with input range from 10A to 32A, outlet number from 1 to 24 and variety of outlet types ( e.g. NEMA, C13, C19, UK, Schuko, French, etc ).



# Intelligent Hybrid Rack Transfer Switch

Raritan's hybrid rack transfer switches use electromechanical relays and silicon-controlled rectifiers (SCRs) to transfer a load between two sources. The result is performance and reliability that exceeds that of standard automatic transfer switches (ATS) and at a lower cost than static transfer switches (STS).

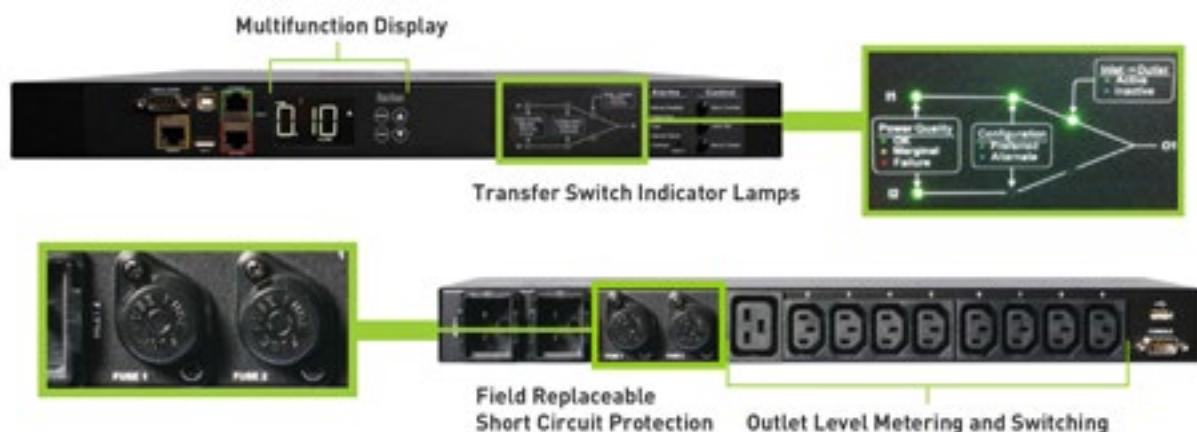


## RELIABLE POWER FOR SINGLE-CORDED DEVICES

- Patented Anti-Arcing Relay technology engineered to prevent relay-welding and ensures transfer
- Blazing-fast load transfers between 4 to 8 millisecond, tested to never drop a power load in real world conditions
- Out-of-phase transfer eliminates stress about planning phases in the cabinet
- Oversized relays (Rated 70A) to handle larger loads with higher reliability
- Protect the switch with field replaceable fast-blow fuses when the device power supply shorts
- Prevents transfers of output short circuits, leading to cascading failure of second power feed
- Redundant power supply and intelligent controller architecture powered by Xerus™ Firmware
- Granular alerting and control at the outlet level uncovers risky conditions to prevent outages.

## PERFORMANCE FEATURES

- Hybrid Technology (relay plus SCR-design) for better power efficiency and less heat (Fan-less architecture)
- Only rack transfer switch on the market featuring Raritan patented, billing-grade (+/-1%) power metering accuracy
- World's first and only rack transfer switch with outlet-level metering and switching (on 5000 series models)
- Only rack transfer switch with power metering, energy quality monitoring, and support for optional environmental sensors
- Local display showing transfer switch status and failover conditions at-glance
- Certified to run in up to 60° C (UL), 50° C (CE) environment at 85% RH
- SecureLock™ compatible to prevent accidental disconnects
- iX7™ Advanced PDU Controller. Powered by Xerus, Raritan's Open Technology Platform, the iX7 provides your PX with more power and faster connectivity





# Branch Circuit Monitoring





# Modular Circuit Monitoring System

The Anord Mardix Modular Circuit Monitoring System (MCMS) has been redefining circuit monitoring since its introduction with a single unit monitoring up to 96 circuits (32 x 3 phase). MCMS is an economical solution for monitoring new installations but it is also designed for retrofit and is small enough to fit inside existing panels.



## KEY BENEFITS

- The versatile Core Module™ system – a single monitoring solution with peripherals optimised for branch circuit and multi-circuit monitoring applications, designed to reduce the cost and complexity associated with legacy systems.
- Presence of voltage detection – detects circuit breaker status even under no load conditions using a proprietary voltage field detection system. It identifies failed circuits that may go unnoticed on conventional monitoring systems.
- Predictive circuit health analysis – uses proprietary algorithms to analyse circuit signatures over time and detect changes indicative of common failure modes in power supplies and other critical loads.
- Waveform capture – high resolution power quality data from all circuits is stored for any power quality deviation, providing invaluable data for evaluation of power disturbances.
- True circuit display – allows data to be expressed according to the actual panel board configuration.

## RAPID INSTALLATION

- Optimised for new and retrofit installations with no disruption to critical loads
- Monitors up to 96 circuits
- Options for solid core, split core CTs, Rogowski coils, and analogue, discrete and pulse inputs

## EASILY ACCESSED DATA

- On-board web server provides immediate access to real-time and logged data
- Integrated data logging supports up to 64GB storage; remotely accessible or manually exportable
- Available cloud monitoring service
- Customisable alarming features

## EASY CONNECTIVITY

- Select from multiple connectivity options including Modbus TCP/IP, RTU, BACnet, WiFi and cellular
- Open protocols allow connection with any third-party monitoring system

## INTELLIGENT FEATURES

- Presence of voltage detection accurately indicates breaker status even under no load conditions
- Predictive Circuit Health Algorithm (patent pending) detects changes in circuit performance to predict potential failures
- True-Circuit Display mapping function presents data according to actual circuit configurations
- Detailed power and energy monitoring per circuit including Waveform capture and THD

## HIGH ACCURACY

True 0.5% accuracy suitable for billing applications.



# Smart Maintenance



# RT Systems Smart Maintenance

SMARTER Maintenance enable customers to get the maximum value out of their assets.

Smart Maintenance, an all-in-one service solution where a single technician handles multiple critical systems, including UPS, generators, monitoring systems, fire protection, cooling, and cleaning.

With this streamlined approach, our expert ensures comprehensive maintenance across disciplines, reducing downtime, improving efficiency, and simplifying management of your facility.

Smart Maintenance offers a smarter, more efficient way to keep your operations running smoothly.

Reduced business risk through **reliability, safety** and **availability** of an installation

**Reduce** unscheduled **downtime** of Assets

Optimise **Opex** and **Capex**, based on equipment condition and criticality

## A nationwide team of service experts powered by digitisation

### Our Market positioning

- 20-40% savings on traditional service models
- Digital end to end (customisable job cards)
- Tiered Service level offers
- Substantial service level upliftment (site custodian)

### Our Approach

- Life Cycle Management
- Advanced Battery Testing
- Wear Checks
- Digital Monitoring and Management
- Spares Management

## Smart Maintenance Building Blocks



Digitisation of the workflow and job cards



Scientific wear checks & battery testing



NextGen (IOT) monitoring and reporting



Quality Control



24/365 standby and monitoring operations centre



Custodian Approach – multiple disciplines and considers the ecosystem



7 Disciplines covered with a single attendance



Highly skilled and certified engineers



Driving Down TCO



Weekly operational engagement



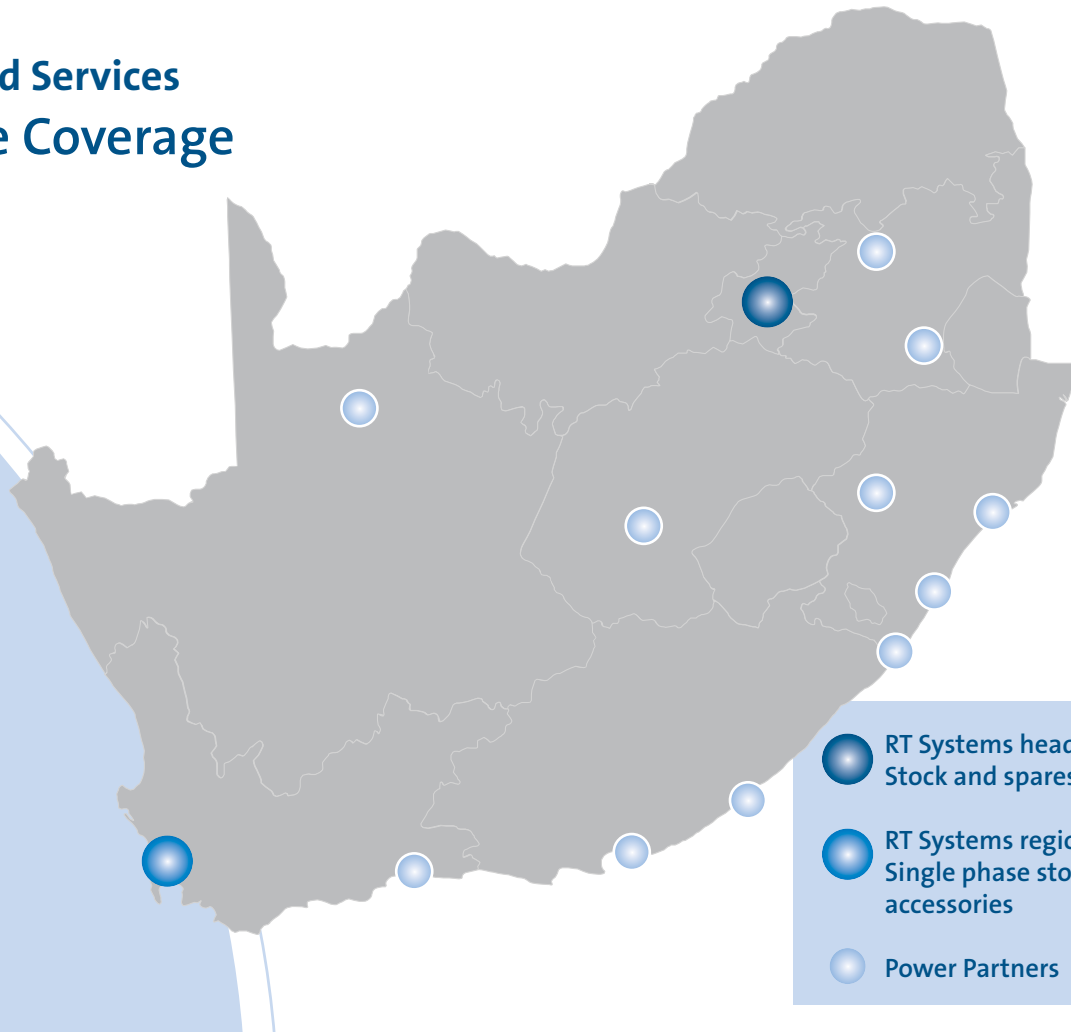


## ALL-IN-ONE SMART



Fully serviceable by  
a single engineer  
dramatically  
reducing TCO

## Managed Services Service Coverage



## Examples of client solutions

### Top 10 Manufacturer

**The Multidisciplinary Country-Wide Infrastructure Maintenance of a Top 10, manufacturing, JSE-listed company**  
RT Systems has managed approximately 100 sites with varied infrastructure types for the last six years where the company was able to increase its service level conversion from 60% to 99% while still allowing for a reduction in overall maintenance spend of 15%.

### Financial Services

**The Multidisciplinary Country-Wide Infrastructure Maintenance of one of South Africa's top financial services institutions**

RT Systems has maintained the main data centre of the customer while also checking and reporting back on its distributed server rooms around the country. The ability to report on the site within 72 hours, digitally, has allowed for the customer to know its environment and make decisions faster than the previous 2-3 week wait on various job cards from multiple service providers.

### Power Utility

**The Multidisciplinary Country-Wide Infrastructure Maintenance of one of South Africa's main power utility providers**

For six years, RT Systems has provided the much-needed infrastructure checks for this mission critical client providing graphical dashboard reports giving the customer a user-friendly view of its environment, and clearer picture of the true nature of immediate risks.



# Call Centre



# RT Systems Data Centre Alert Response Call Centre

## INTRODUCING THE RT SYSTEMS CALL CENTRE

In 1995, RT Systems opened the doors of one of South Africa's first and only multitenant, server room, remote call centre. Within a few years we exponentially increased the number of tenants. Via simple message and key, proactive after hours' calls to our clients we have brought a critical service to our clients allowing for them to keep data, work packets and business critical applications safe 24/365.

The knowledge and know how of maintaining such a service has kept us the industry leader in this space and niche that is synonymous with our name, R(emote) T(echnology) Systems.

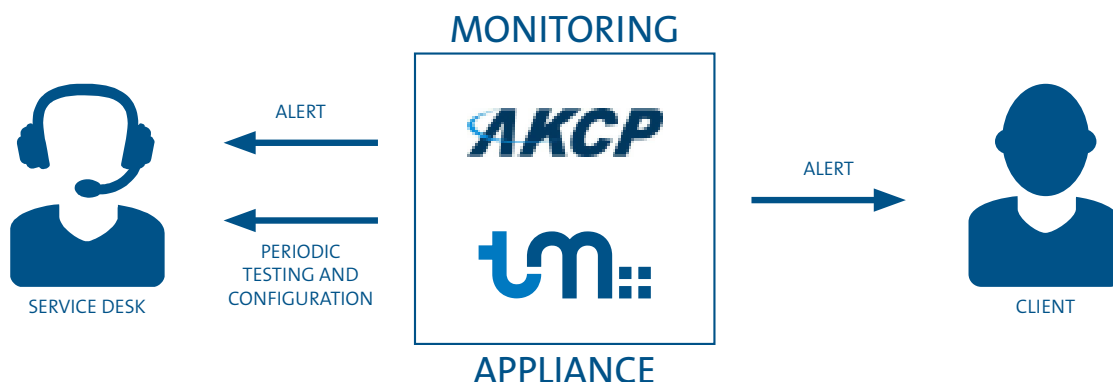
## PAST USE CASES

### PROACTIVE RESPONSE AT TIER III DATA CENTRE

The particular data centre's operational staff were able to mobilise smart hands staff and management to identify the location of a flood source. Just prior to midnight on a rainy Friday night the RT Systems' call centre personnel was alerted to a flood alarm above the user's ground floor. A call to operational staff was made but within a few minutes of the first alarm multiple other alerts were received indicating a growing flood and through inference where the source of the flood was to be

### WHY ENVIRONMENTAL MONITORING?

With business placing an increasing demand on system availability, IT managers are now faced with the need to provide strictly controlled environmental conditions such as power, temperature, flood, humidity and fire protection. This means that the IT department is not only focused on providing support to IT Systems but are now concerned with air conditioning, generators, UPS and fire suppression systems.



POWER		ENVIRONMENTAL			ACCESS & SECURITY
<ul style="list-style-type: none"> <li>• Generator Run/ Stop</li> <li>• Low Fuel</li> <li>• Common Alarm</li> </ul>	<ul style="list-style-type: none"> <li>• UPS Common Alarm</li> <li>• Low Battery</li> <li>• Bypass Alarm</li> </ul>	<ul style="list-style-type: none"> <li>• Temperature (supply and return air of HVAC)</li> <li>• Server Supply Air</li> </ul>	<ul style="list-style-type: none"> <li>• Leak Detection</li> <li>• Water</li> <li>• Diesel</li> </ul>	<ul style="list-style-type: none"> <li>• Fire Panel Fault</li> <li>• Fire Detected</li> <li>• Not inAuto</li> </ul>	<ul style="list-style-type: none"> <li>• Surveillance</li> <li>• Access (Doors)</li> </ul>

found. The full 1st floor and various ground floor cabinet roofs of the data centre had been compromised as a result of day time work by a contractor. Earlier in the day, the contractor had left some packaging of the newly installed infrastructure over a drainage vent causing for the water to overflow into the first floor and very quickly spread through the data centre. By alerting the client's team the flood's source was removed averting the disaster of multiple hosted clients.

## PRE-EMPTIVE FIRE IDENTIFICATION

A client arrived in the early hours of a weekday morning to find a smoking UPS and immediately pressed the Emergency Power Off button. The client was able to make this judgement call to drive to site after the RT Systems' call centre had called with the concern that the alarms emitting from the UPS were not usual and erratic. While there was no actual fire alarm in this instance it was likely that a fire was averted.

## TYPICAL ALARMS

With the advent of IP information, the types of alarms are endless. It is important to simplify the potential noise that infrastructure can create. Through our experience we have identified the below critical alerts to be aware of:

### AIR-CONDITIONING

- Air conditioning equipment status
- Temperature monitoring (Down time due to thermal cut-out on equipment)
- Humidity monitoring (Static / Condensation risk)
- Airflow (Lack of Airflow resulting in potential hot spots)



## WATER DETECTION

Potential risks include:

- Leaking Cooling Systems
- Adjacent Bathrooms or Kitchens
- Burst Pipes
- Fire Sprinklers

## FIRE DETECTION AND SUPPRESSION SYSTEMS

- Early and remote notification of fire conditions
- Notification of fire suppressant release
- Notification of fault conditions on fire detection and suppression equipment
- Manual / Auto Switch position

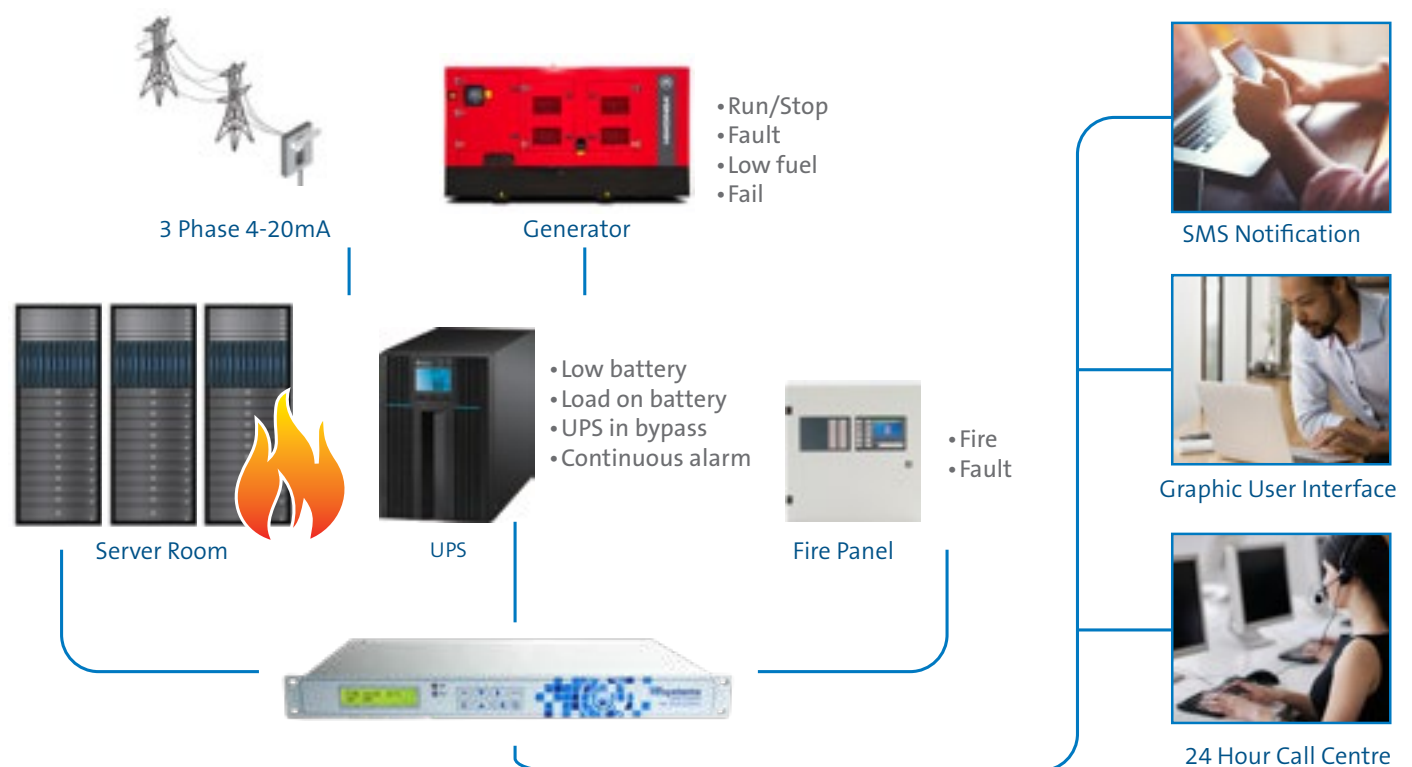
## TYPICAL UPS ALARMS

- Load off Inverter / Inverter fault
- Low Battery (UPS Shut down imminent)
- Bypass Active (Critical equipment is unprotected)
- Common Alarm (Summary Alarm)

## TYPICAL GENERATOR ALARMS

- Generator run/stop
- Fail to start
- Common alarm
- Low fuel

\*Note: Above are examples and are dependent on availability, requirements and the availability of ports.



# Inverters, Trolleys & DC UPS





## HIGH FREQUENCY PURE SINE WAVE POWER INVERTER

### DE5000 Series (5KW)



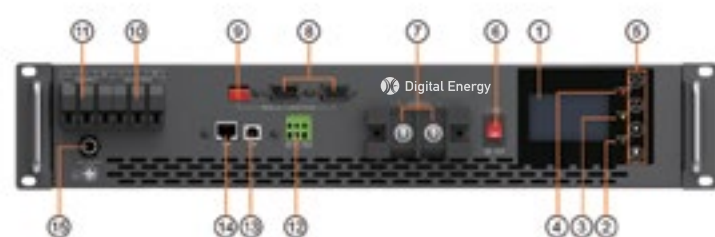
#### FEATURES

- Pure sine wave inverter
- Configurable input voltage range  
For home appliances and personal computers via LCD setting
  - Configurable battery charging current based on applications via LCD setting
  - Configurable AC Charger via LCD setting
  - Compatible to mains voltage or generator power
- Auto restart while AC is recovering
- Overload/Over temperature/short circuit protection
- Smart battery charger design for optimised battery performance
- Cold start Function

#### Multi-function versatility

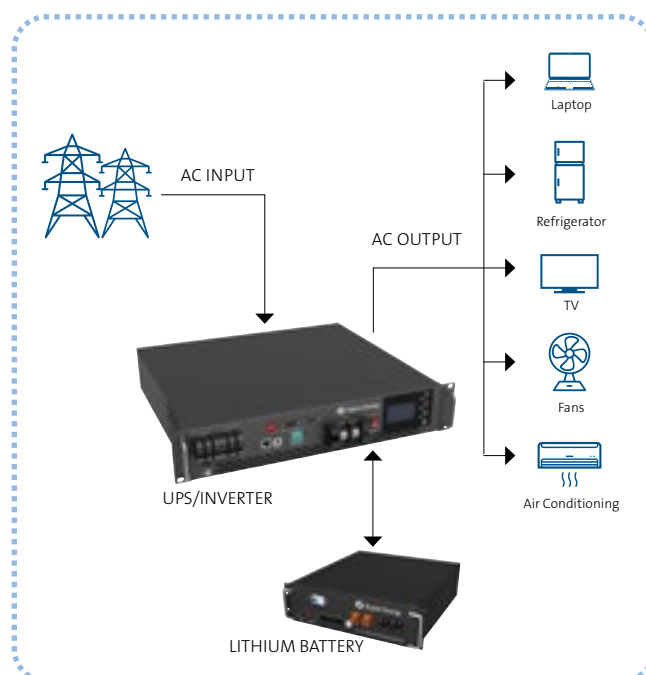
The DE5000 Series multi-function inverter/charger, combines the functions of an inverter and battery charger to offer uninterruptible power in a portable size. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC charger and acceptable input voltage based on different applications.

#### Back Panel Description



1. LCD display
2. Status indicator
3. Charging indicator
4. Fault indicator
5. Function buttons
6. Power on/off switch
7. Battery input
8. Parallel communication port (only for parallel model)
9. Parallel switch
10. AC output
11. AC input
12. Dry contact
13. USB
14. RS485 communication port
15. Circuit Breaker

#### Effortless Connection





## HYBRID INVERTER DE1800 PRO 5,2KW

### FEATURES

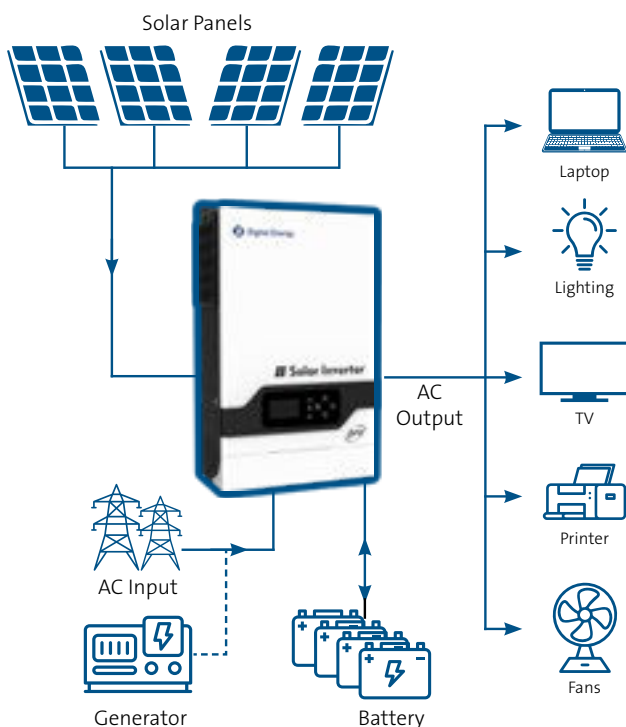
- Pure sine wave output
- Smart LCD setting (Working modes, Charge Current, Charge Voltage, etc).
- Built-in MPPT solar charge controller
- MAX PV Array Open Circuit Voltage: 450V
- Can provide the power to the load without battery
- Combining solar system, AC utility, and battery power source to supply continuous power
- Overload, short circuit and Deep discharge protection
- Cold start function
- Support USB, RS485 monitoring function
- Parallel operation with up to 3 units

### DE1800 PRO INVERTER

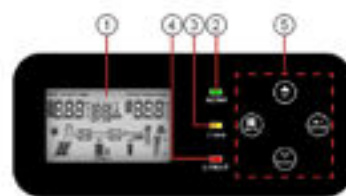
DE1800 PRO is a multi-function inverter/charger, combining the functions of inverter, MPPT solar charger and battery charger to offer uninterruptible power support in a portable size. DE1800 PRO Series can run without a battery. The Maximum PV array open circuit voltage can reach 450V and MPPT voltage is 150~430Vdc, which helps the user make full use of solar energy.

### Solar System Connection

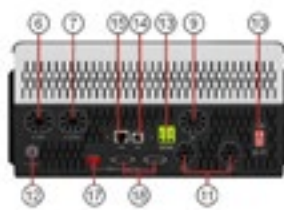
Not only can this product be used as DC UPS to supply uninterruptible power to network equipment like modem, router, CCTV etc., but it can also be used as a portable power bank to charge smart phones and other digital devices.



### Front and Back Panel Description



1. LCD Display
2. Status Indicator
3. Charging Indicator
4. Fault Indicator
5. Function Buttons



6. AC Input
7. AC Output
8. Fan
9. PV Input
10. Power on/Off Switch
11. Battery Input
12. Circuit Breaker



13. Dry Contact
14. USB
15. RS-485/CAN Communication Port
16. USB Wifi
17. Parallel Switch (only for parallel model)
18. Parallel Communication Switch (only for parallel model)



# INVERTERS

WITH LITHIUM BATTERY STORAGE  
DE1800 HM SERIES

Stable, safe energy storage with higher capacity for power hungry devices.



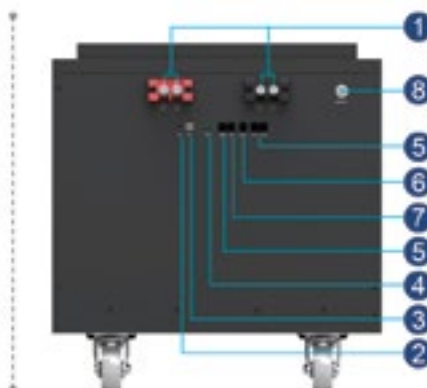
ENERGY	Efficient Bulb (5W)	Fan (45W)	Rice Cooker (60W)	Laptop (30W fully charged)	32 Inch Led TV (60W)	Refrigerator (140W)	Microwave (650W)
1kwh	200 HRS	22 HRS	16 HRS	33 HRS	16 HRS	7 HRS	1.5 HRS
2kwh	400 HRS	44 HRS	32 HRS	66 HRS	32 HRS	14 HRS	3 HRS
3kwh	600 HRS	67 HRS	48 HRS	99 HRS	48 HRS	21 HRS	4.5 HRS
6.4kwh	1280 HRS	142 HRS	106 HRS	213 HRS	106 HRS	46 HRS	10 HRS

The technical specifications of this document are subject to change without any notice

## Input & Output Ports



1. Circuit breaker
2. AC input
3. AC output
4. RS485 communication port
5. USB port
6. Dry contact
7. PV input
8. Battery input
9. Power on/off switch



1. BAT port
2. RST port
3. ADS port
4. DRY port
5. RS485 communication port
6. RS232 communication port
7. CAN port
8. ON/OFF indicator

The technical specifications of this document are subject to change without any notice  
\*Input and Output Port indication is applicable to the 5kVA unit only.





## DE1000 SERIES PORTABLE POWER STATION

### FEATURES



#### OUTPUT

High capacity  
1000W Output.



#### PURE SINE WAVE

Identical to household power.  
Will not damage electrical  
equipment.



#### CHARGING OPTIONS

11 Output Ports accommodates multiple  
devices.



#### HD SCREEN

Smart LCD Touch Screen Display.

### PURE SINE WAVE INVERTER

DE1000 series is a pure sine wave inverter suitable for powering TVs, stereos, laptops, desktop computers and other home appliances.

It will automatically switch to inverter and provide power when AC is interrupted unexpectedly. It includes a built in 4 series LiFePO4 1.2kWh battery.

### Input & Output Ports



1. LCD Screen
2. LED Light
3. Operation button
4. Power Switch
5. DC12V/10A output(5521) ×2pcs
6. USB-A 5V ×4pcs
7. USB TypeC (PD 18W)
8. Charger input protect
9. AC input
10. Input breaker
11. PV input
12. AC output ×3pcs





## MINI DC UPS NPS SERIES



### Mini DC UPS

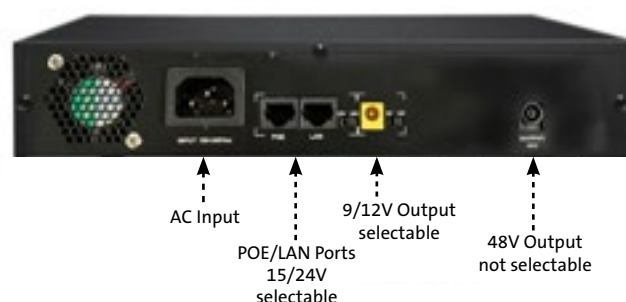
NPS Series- 120W 21600mAh Mini DC UPS with 48V/2A output for NVR systems. This product can be used as a DC UPS to supply uninterruptible power to network equipment like modems, routers, CCTV etc but can also be used as a portable power device to charge smart phones and other digital devices which guarantees continuous operation of your devices.

### Product Details



### FEATURES

1. Continuous monitoring of battery capacity
2. Batteries keep the power standby and gentle battery charging
3. Mini DC UPS with compact size with high power performance
4. Long Cycle LiFePO4 batteries, provides long backup to the loads.
5. High compatibility, suitable for most digital products in the market.
6. Smart detected adapter power, external adapter or built in adapter for option
7. Reliability and great technology design for Network Video Recorder devices



### Suitable for:

This product can not only be used as DC UPS to supply uninterruptible power to network equipment like modem, router, CCTV etc., but can also be used as a portable power bank to charge smart phones and other digital devices.



Laptop



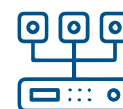
WiFi



Monitor



Bridge



NVR



## DCT 120 DC UPS

### DC UPS SERIES

#### FEATURES

1. High capacity lead-acid batteries, provides long backup to the loads.
2. High compatibility, suitable for most digital products in the market.
3. POE can transmit power and simplify wiring.
4. Intelligent circuit design with over-charging, over-discharging and short circuit protections.
5. Built-in adapter allows wide AC voltage range (85~265Vac).



## ECOPUTER P60 UPS

### DC UPS SERIES

#### FEATURES

1. Long cycle LiFePO4 batteries, provides long backup to the loads.
2. High compatibility, suitable for most digital products in the market.
3. Smart detected adapter power
4. Intelligent circuit design with over-charging, over-discharging and short circuit protections.



Input



Adapter



Ecoputer P60



Modem/Router



## LITHIUM ION PHOSPHATE BATTERY

DE15-12100



### Applications

Lithium Ion Phosphate can be used in most applications that use Lead Acid, GEL or AGM type batteries.

Suitable applications include:

- Caravan
- Marine
- Golf Car
- Buggies
- Remote Monitoring
- Switching applications and more
- UPS

### CAUTIONS

- Do NOT short circuit, reverse polarity, crush or disassemble.
- Do NOT heat or incinerate.
- Do NOT immerse in any liquid.
- Store at 30~50% SOC. Recharging every 3 months is recommended. The storage area should be clean, cool, dry and ventilated.

### FEATURES



#### High cycle life

2000 cycles @80% DoD for effectively lower total of ownership cost.



#### Longer service life

Low maintenance batteries with stable chemistry.



#### Built in circuit protection

Battery Management System (BMS) is incorporated against abuse.



#### Better storage

Up to 6 months thanks to its extremely low self discharge (LSD) rate and no risk of sulphation.



#### Quickly recharge

Save time and increase productivity with less down time thanks to superior charge/discharge efficiency.



#### Extreme heat tolerance

Suitable for use in a wider range of applications where ambient temperature is unusually high: up to +60°C.



#### Lightweight

Lithium batteries provide more Wh/Kg while also being up to 1/3 the weight of its SLA equivalent.

## LITHIUM ION PHOSPHATE BATTERY

### LP1500 SERIES

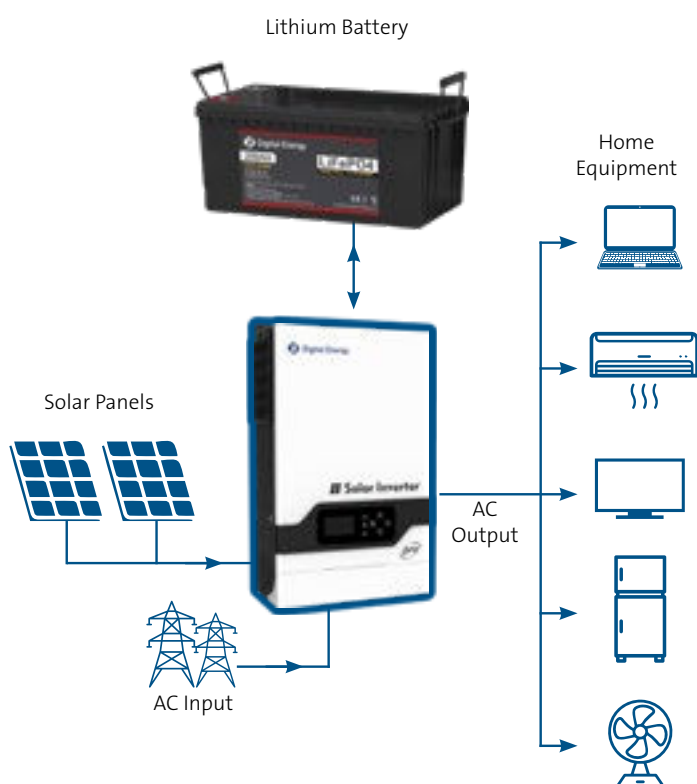


#### LP1500 SERIES

Digital Energy's LP1500 SERIES LiFePO4 battery is suitable for E-mobility, energy storage systems, defence & security, outdoor telecom applications, renewable energy systems and other harsh environment applications.

**\* Custom capacity is acceptable.**

#### System Diagram



#### High cycle life

4000 cycles @ 80% DOD, 25°C for effectively lower total of ownership cost.



#### Longer service life

Low maintenance batteries with stable chemistry.



#### Built in circuit protection

Battery Management System (BMS) is incorporated against abuse.



#### Better storage

Up to 6 months thanks to its extremely low self discharge (LSD) rate and no risk of sulphation.



#### Quickly recharge

Save time and increase productivity with less down time thanks to superior charge/discharge efficiency.



#### Extreme heat tolerance

Suitable for use in a wider range of applications where ambient temperature is unusually high: up to +60°C.



#### Lightweight

Lithium batteries provide more Wh/Kg while also being up to 1/3 the weight of its SLA equivalent.



#### Function

Support parallel operation



# LIFE PO4 LITHIUM ION PHOSPHATE BATTERY

## DE1600 SERIES



### FEATURES



#### High cycle life

4000 cycles @80% DoD for effectively lower total of ownership cost.



#### Longer service life

Low maintenance batteries with stable chemistry.



#### Built in circuit protection

Battery Management System (BMS) is incorporated against abuse.



#### Better storage

Up to 6 months thanks to its extremely low self discharge (LSD) rate and no risk of sulphation.



#### Quickly recharge

Save time and increase productivity with less down time thanks to superior charge/discharge efficiency.



#### Extreme heat tolerance

Suitable for use in a wider range of applications where ambient temperature is unusually high: up to +60°C.



#### Lightweight

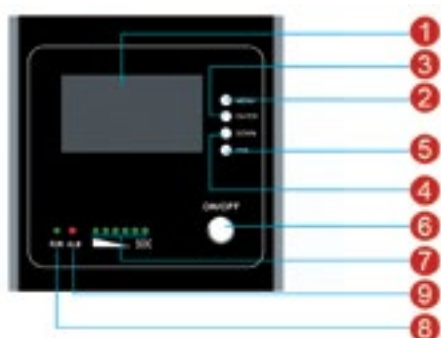
Lithium batteries provide more Wh/Kg while also being up to 1/3 the weight of its SLA equivalent.

### Wall-mounted energy storage system

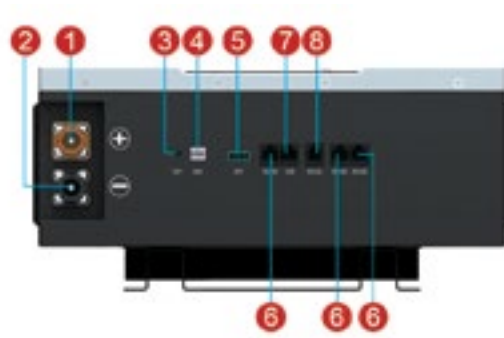
Digital Energy wall mounted Lithium battery (LiFePO4 Battery) solutions are highly integrated, deep cycle backup power solutions for your home energy storage system. With rich experience and advanced techniques, the product has the features of the fashionable design, high energy, high power density, long service life and ease of installation and expansion.

\* Custom capacity is acceptable.

### Input & Output Ports



- |                  |                    |
|------------------|--------------------|
| 1. LCD display   | 6. Switch on/off   |
| 2. Menu buttons  | 7. SOC indicator   |
| 3. Enter buttons | 8. RUN indicator   |
| 4. Down buttons  | 9. Alarm indicator |
| 5. DES buttons   |                    |



- |               |                             |
|---------------|-----------------------------|
| 1. BAT+       | 5. DRY port                 |
| 2. BAT-       | 6. RS485 communication port |
| 3. RST port   | 7. CAN port                 |
| 4. ADS switch | 8. RS232 communication port |



## RACK MOUNTED LITHIUM ION PHOSPHATE BATTERY DE18-48100



### Applications

Lithium Ion Phosphate can be used in most applications that use Lead Acid, GEL or AGM type batteries.

Suitable applications include:

- Switching applications and more
- Base transceiver station
- Communication equipments
- Central office
- Telecommunication systems
- Electronic cash registers
- Microprocessor based office machine
- UPS

### CAUTIONS

- Do NOT short circuit, reverse polarity, crush or disassemble.
- Do NOT heat or incinerate.
- Do NOT immerse in any liquid.
- Store at 30~50% SOC. Recharging every 3 months is recommended. The storage area should be clean, cool, dry and ventilated.

### FEATURES



#### High cycle life

4000 cycles @80% DoD for effectively lower total of ownership cost.



#### Longer service life

Low maintenance batteries with stable chemistry.



#### Built in circuit protection

Battery Management System (BMS) is incorporated against abuse.



#### Better storage

Up to 6 months thanks to its extremely low self discharge (LSD) rate and no risk of sulphation.



#### Quickly recharge

Save time and increase productivity with less down time thanks to superior charge/discharge efficiency.



#### Extreme heat tolerance

Suitable for use in a wider range of applications where ambient temperature is unusually high: up to +60°C.



#### Lightweight

Lithium batteries provide more Wh/Kg while also being up to 1/3 the weight of its SLA equivalent.



## LITHIUM ION PHOSPHATE BATTERY

### LP1800 SERIES



#### LP1800 SERIES

Digital Energy's 19" rack standard backup battery is based on a Lithium Ion phosphate battery. It has been designed to provide backup power for telecom equipment or energy storage systems. The battery has excellent safety, high energy density, long lifetime, good temperature performance and a high green power rating for excellent safety and high reliability.

*\* Custom capacity is acceptable.*



- |                     |                              |
|---------------------|------------------------------|
| 1. ON/OFF indicator | 8. DRY port                  |
| 2. RUN indicator    | 9. RS485 communication port  |
| 3. Alarm indicator  | 10. CAN port                 |
| 4. SOC indicator    | 11. RS232 communication port |
| 5. RST port         | 12. Start buttons            |
| 6. ADS switch       | 13. BAT+                     |
| 7. Power switch     | 14. BAT-                     |



#### High cycle life

6000 cycles @ 80% DOD, 25°C for effectively lower total of ownership cost.



#### Longer service life

Low maintenance batteries with stable chemistry.



#### Built in circuit protection

Battery Management System (BMS) is incorporated against abuse.



#### Better storage

Up to 6 months thanks to its extremely low self discharge (LSD) rate and no risk of sulphation.



#### Quickly recharge

Save time and increase productivity with less down time thanks to superior charge/discharge efficiency.



#### Extreme heat tolerance

Suitable for use in a wider range of applications where ambient temperature is unusually high: up to +60°C.



#### Lightweight

Lithium batteries provide more Wh/Kg while also being up to 1/3 the weight of its SLA equivalent.



#### Function

Support parallel operation

# Rectifiers





## Rack power systems

CellID is modular and can be configured with additional converters to meet any requirement. It is the most compact power system and it offer efficiency up to 98%. Reliable system operation, generates savings in OPEX and CO2.



### Delta CellID 40 - DPS 850B-48-3

#### Key features

- 19IN-1U rack mounted system
- Max. install power 2,55 kW
- Max. 3 rectifiers 850 W
- Efficiency 95.2 %
- Input voltage 80 VRMS to 300 VRMS
- AC configuration L + N + PE
- Max. output current 40 A
- Load breakers 6 x MHCB (2 - 30 A) or 2 x MHCB (6 - 50 A)
- Battery breakers 2 x MHCB (50 A)
- Controller ORION Touch
- IEC 60950 / EN 300386
- Weight 4.1 kg



### Delta CellID 125 - DPS 3000B-48-3

#### Key features

- 19IN-3U rack mounted system
- Max. install power 9 kW
- Max. 3 x rectifiers 3000 W
- Efficiency 96.4 % or 98 % Input voltage 80 VRMS to 300 VRMS
- AC configuration 3L + N + PE
- Max. output current 125 A
- Load breakers 12 x MCB (6 - 63 A) optional split for critical and no critical groups
- Battery breakers 2 x MCB (80 - 125 A)
- Controller ORION Touch
- IEC 60950 / EN 300386
- Weight 9 kg





# Telecom Power Solutions

Modular Rectifier with up to 98% Efficiency



## Delta CelID 300 - DPS 2900B-48-6

### Key features

- 19IN-6U rack mounted system
- Max. install power 17.4 kW
- Max. 6 x rectifiers 2900 W
- Efficiency 96,4 %
- Input voltage 80 VRMS to 300 VRMS
- AC configuration 3L + N + PE or optional different configuration
- Max. output current 250 A
- Load breakers 15-21 x MCB (2 - 63 A) optional split for critical and no critical groups
- Battery breakers 2-6 x MCB (up to 125 A) or 2-3 x MCB (up to 200 A) or 2 x MCB (up to 300 A))
- Controller ORION Touch
- IEC 60950 / EN 300386
- Weight 13 kg

The DELTA CelID 300 is a modular rectifier that can be configured with additional converters to meet any requirement. With a compact power offering efficiency of up to 98%, this unit is ideal for space-critical applications. Easy installation and expandability add to the success of the system. Reliable system operation generates savings in OPEX and CO2.

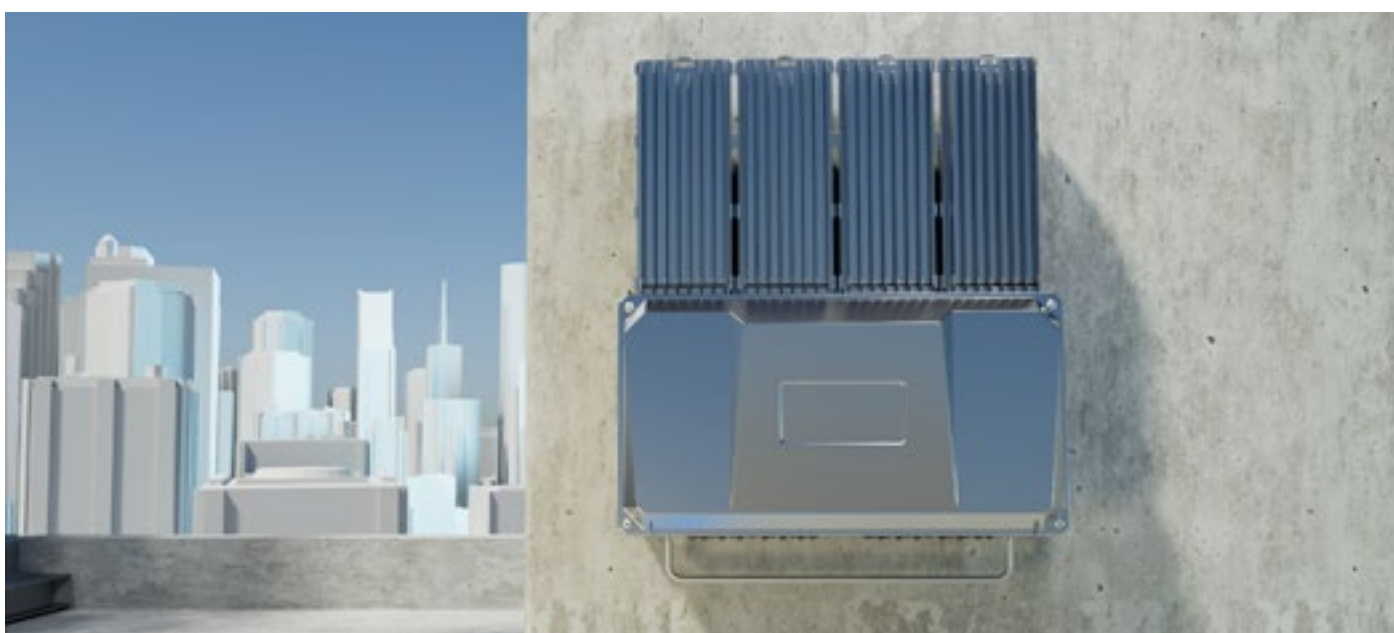
### Applications

- Mobile telecommunication
- Fixed line telecommunication
- Broadband networks
- Data centres
- Switching centres
- Modular UPS configurations



# A Compact Outdoor Rectifier System

An ideal solution for 5G outdoor antenna systems. Dustproof and waterproof to the IP65 standard.



## Super High Efficiency Power System for Telecom

This 48V 8KW power system provides uninterrupted 48Vdc, either backed up by IP65 free-standing Lithium Ion batteries or by normal indoor batteries in an outdoor cabinet. The unit can also be powered by a backed-up 400V AC or DC feed. It boasts application flexibility with a power range of 2-8kW and can be expanded in the field as load demands increase.

The IPack65 rectifier and the system compartment are IP65 compliant – without fans or filters – and are robust requiring no regular maintenance.



The IPack65 is a true 5G enabler. Super high efficiency, small size & weight, and flexible installation options.

## Main features

- Super high efficiency – 97.7% rectifiers
- IP65 - convection cooling
- Full distribution - 15 Load Branches (LVLD)
- Smartpack S Controller allows for remote monitoring and control
- Hot pluggable rectifiers
- Built-in smart controller, ready for cloud integration and smart management
- Great application flexibility, ideal for 5G and other 2-8kW applications
- We believe IPack65 will empower your telecom network with unmatched performance and reliability.



## ORION

# Remote Monitoring and Management Solutions



ORION is more than just a power system controller. Due to its versatile connectivity and configurability ORION can provide full site control. Monitoring reports and alarms are available remotely via standard protocols, SNMP, Modbus and MQTT, with customised content. Battery management with automatic capacity test and life prediction as well as enhanced rectifier functions, including redundancy supervision, allow planning site visits in a cost-effective manner.

ORION is hot-pluggable, with easy configuration management and supports various languages. The controller supports both lead acid and lithium-ion batteries.

### Features & Benefits

- Fully backwards compatible with previous ORION versions
- An easy to read colour display with touch functionality for intuitive and convenient local operation
- Integrated WEB server –very easy to use and operate
- Remote monitoring via Gigabit Ethernet, modem or RS485
- Easy integration of 3rd party modules via serial port or Ethernet
- Easy maintenance by pluggable architecture and the automatic backup stored in the MicroSDcard
- Integrated PLC (Programmable Logic Controller) functions to enhance flexibility, and monitoring and controlling site infrastructure
- Advanced battery management and testing methods





# Rectifiers







# Rectifier and Inverter in One Box

## Combining the functions of a rectifier and an inverter – the Eltek Rectiverter.

A Rectiverter is a technology that combines the functions of a rectifier and an inverter, eliminating the need for a static transfer switch.

The Rectiverter has three ports:

- An AC input
- An AC output
- A one or bidirectional DC port for output or both input and output

During normal operation, the Rectiverter provides both AC and DC or AC only power with a total load of up to 2000VA / 1500W per module. The AC input is first rectified, then fed to a built-in inverter for AC output. The rectified AC input is also fed to a DC/DC converter for appropriate DC load output, and to batteries for charging depending on the model.

In case of AC failure, the DC flow is reversed from the batteries to feed the inverter for conversion to AC, and to take over the DC load depending on the model. The transition from AC to DC feed is instantaneous and with no load disturbance.

### Main features

- Unique 3-in-1 operation
- Inverter
- Rectifier
- Power source transfer
- Modular design
- High efficiency
- Global compliance
- Patented technology
- Hot pluggable
- Voltage keying



The Rectiverter is a combined AC UPS and DC power supply but can also be used as a pure inverter. It is intended for the use of building a modular AC and DC UPS. Up to 96 modules can be configured in parallel, preferably distributed over three phases.

It simplifies solutions providing both AC and DC power to critical loads in telecom, data centre, and industrial applications. It features a power conversion efficiency of 96% in mains mode and 94% when operating as an inverter.

### Can an Eltek Rectiverter and Delta Rectifier be combined?

Indeed, a system can be established that integrates a Rectiverter (as a Pure Inverter), a Solar Converter, and Rectifiers, all under the control of the Delta Orion controller. This system will be fully unified and manageable. The intelligent logic of Orion will be accessible to all power systems that are part of this integration.

### Why combine a Rectifier and Inverter (Pure Inverter)?

**Simplicity:** Combining a rectifier, which converts AC to DC, and an inverter, which converts DC to AC into one box, simplifies the complexity of power systems.

**Controllability and monitoring:** This will allow for smart energy management and load control. Easy integration through the Delta / Eltek Modbus.

**Economically Efficient:** The system minimises the need for extensive equipment and streamlines the architecture, leading to a significant decrease in the total cost of ownership. Its modular structure ensures economical upkeep and enhances the reliability of the system. Furthermore, the system's scalability allows for cost savings as it can be expanded or downsized based on power requirements.



# Container Solutions



## Custom Fibre Container Build

Container Size: 6050mm x 2450mm

Recommended plinth size: 7250mm x 2850mm

This is to accommodate generator slide out of 1000mm)

### Cabinet 1:

19" x 600mm DC Power  
(CellD300/Orion + 150Ah  
Batteries x 3)

### Cabinet 2:

19" x 600mm AC Power  
(2x 5kW Inverters + 150Ah  
Batteries x 3)

### Cabinet 3:

21" / 19" x 800mm Split  
to accommodate (OLT –  
Customer to supply)

### Cabinet 4:

19" x 800mm "AC  
Equipment" housing  
Switches & others (CCTV  
incl)

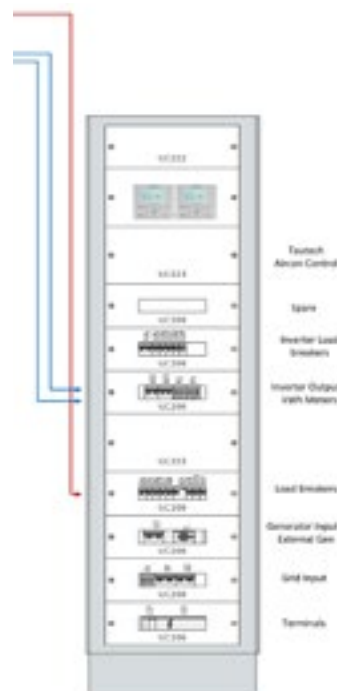
TM2 Monitoring for Fall-back



20KVA Himinsa Generator  
with 460 Litre Fuel Tank.  
Fresh air inlet louvre for  
generator in container doors

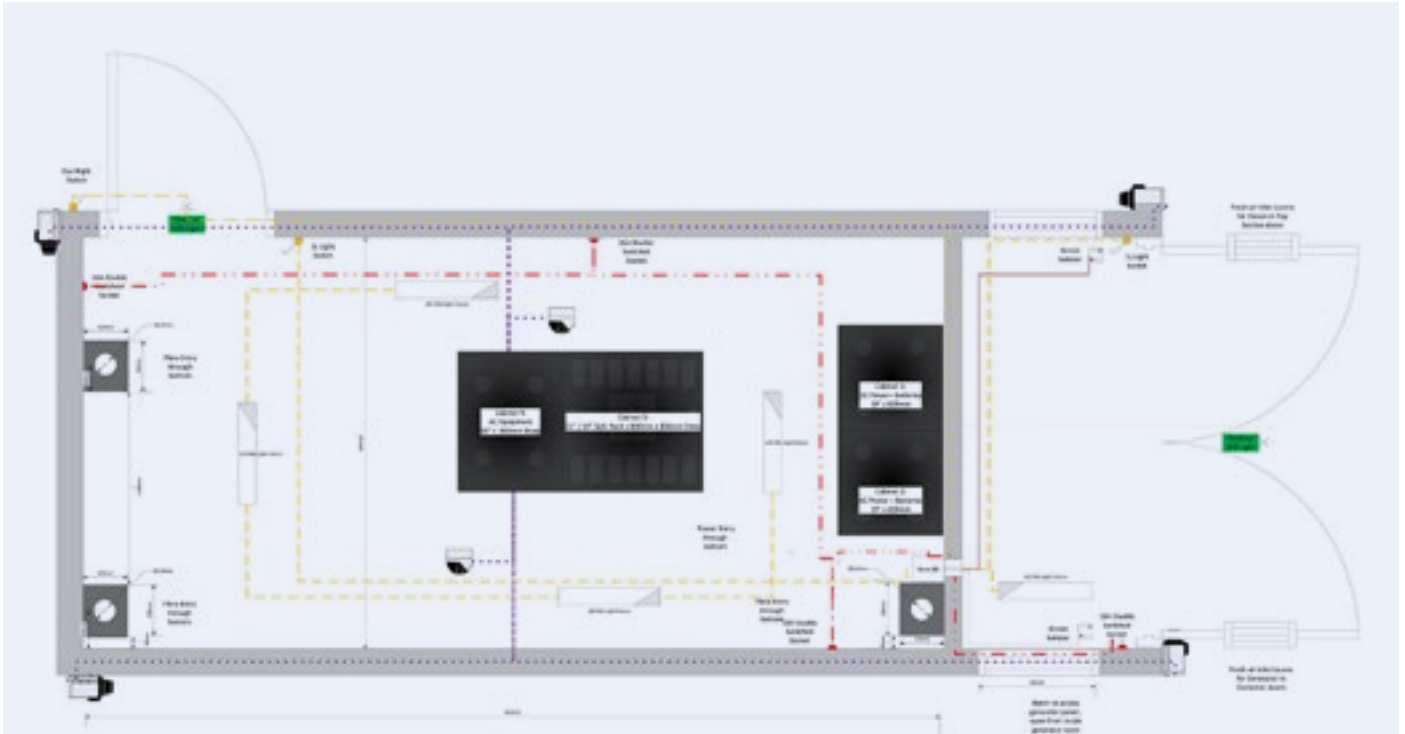
Security features include an outdoor Bullet Camera, indoor 360° IP Camera, Light Fixture, DC Emergency Extraction and a Switch Socket Outlet.

Delivered to site as a plug and play application.

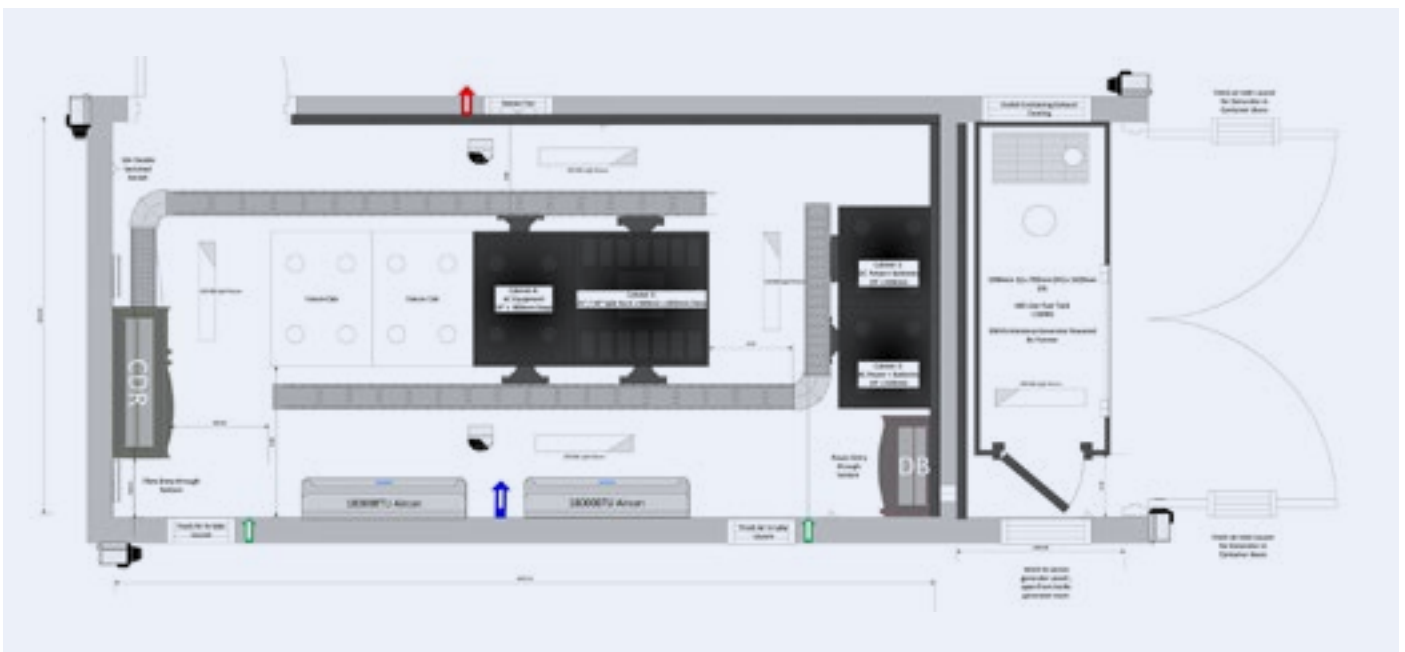




## Custom Fibre Container configuration



Description



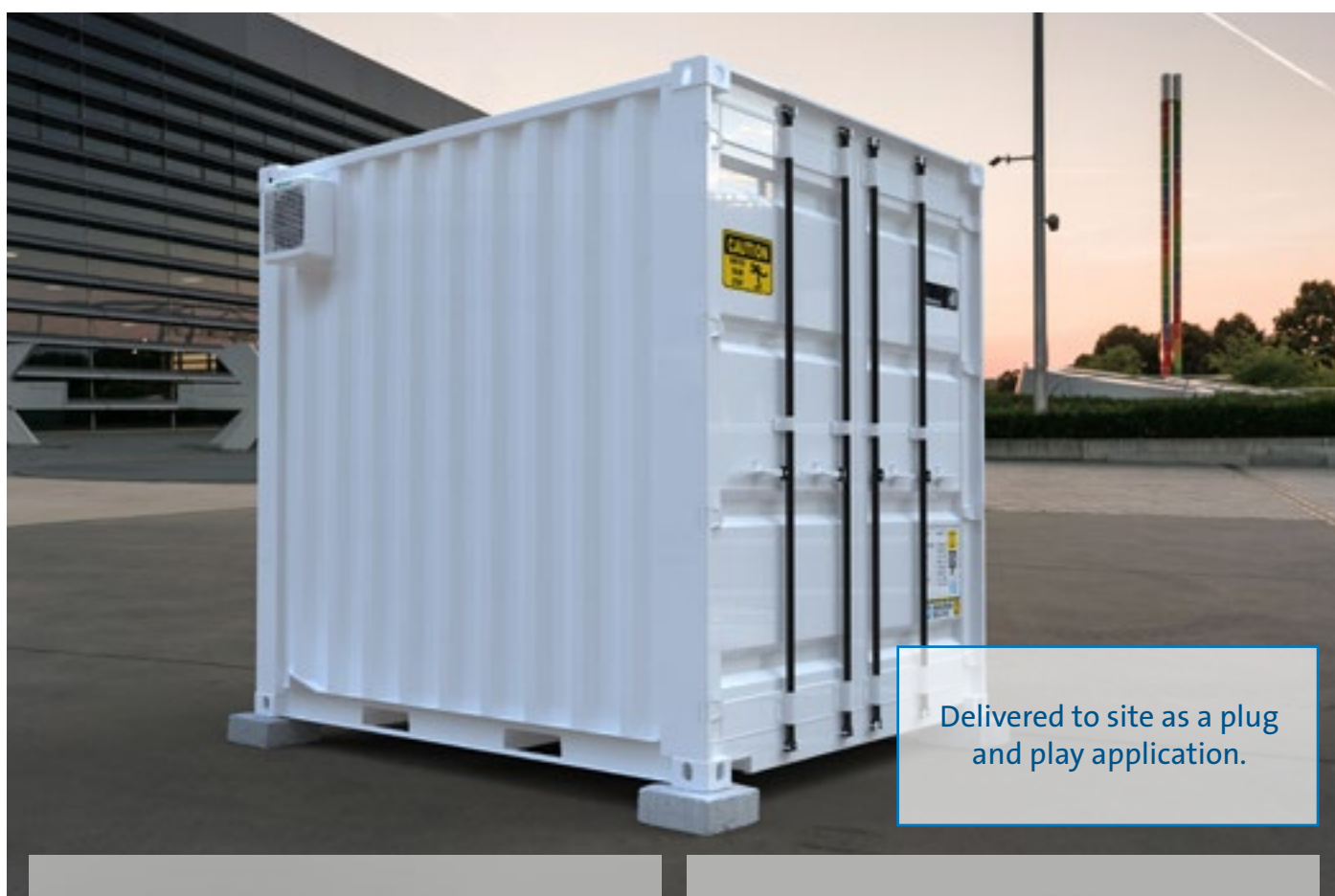
Description

Container Size: 6050mm x 2450mm  
 Recommended plinth size: 7250mm x 2850mm  
 This is to accommodate generator slide out of 1000mm)

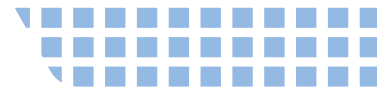


## Custom Data Centre Container Build

RT Systems offers complete portable Custom Data Centres designed to specification. Ideal for remote locations and equipped with critical infrastructure including reserve power solutions, cooling, remote monitoring, fire suppression and access control.







## Portable • Secure • Built to Your Specification

When your operations demand reliability anywhere, RT Systems delivers with fully customisable, portable Data Centre Containers — engineered to perform in even the most remote environments.

Each container is a complete turnkey solution, purpose-built to your specifications and equipped with all critical infrastructure — including reserve power, cooling, remote

monitoring, fire suppression, and secure access control. Delivered as a plug-and-play system, your data centre arrives on-site ready for immediate deployment.

## Why Choose an RT Systems Data Centre Container?

**Custom-Built to Specification:** Designed around your operational requirements — no unnecessary components, only what you need.

**Rapid Deployment:** Delivered fully equipped and tested for immediate installation and operation.

**Reliable Performance:** Engineered to ensure uptime and resilience in challenging environments.

**Scalable & Modular:** Easily expanded or relocated as your infrastructure grows.

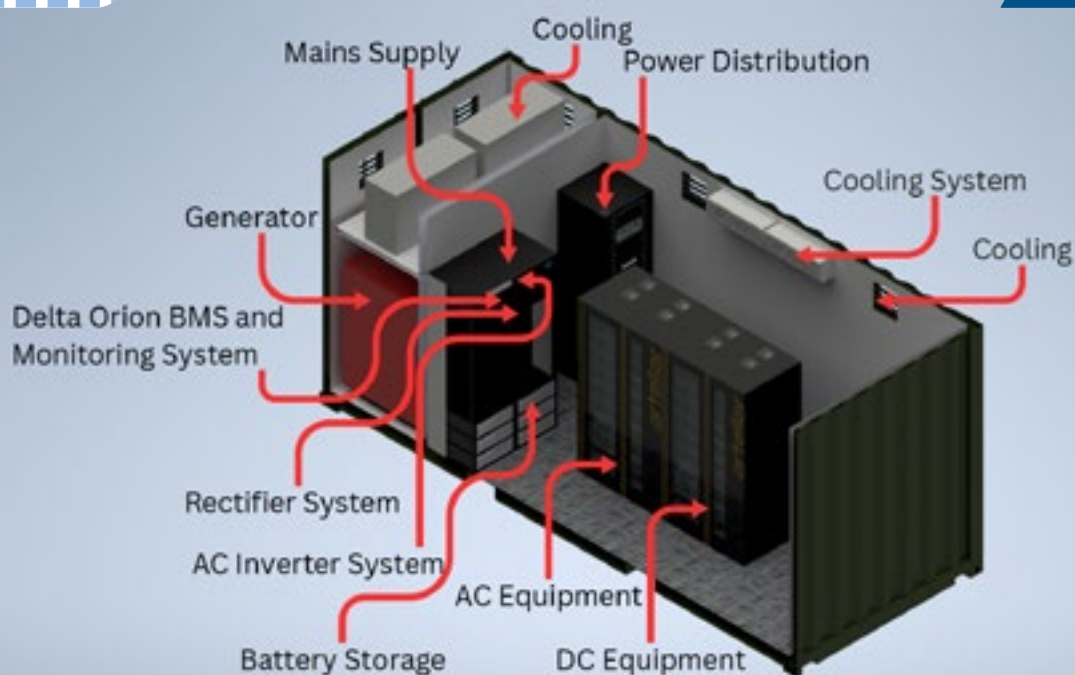
**Comprehensive Support:** From design and build to commissioning and maintenance — RT Systems supports every stage.

## Built for Africa.

## Powered by RT Systems.

Whether you need a remote data node, a telecom hub, or a secure edge computing site, RT Systems delivers custom-engineered containerised data centres that combine mobility, resilience, and efficiency — all from a trusted leader in telecom power and infrastructure.





## Customisation Options

Clients can configure their container build from a wide range of high-quality components and systems, including:

- Air Conditioning
- Illumination
- Various Rack Profiles
- Generator
- Fuel Tank
- Extraction Fan
- Surveillance Cameras
- Power Supply and Distribution
- Sound Proofing
- Secure Access
- Remote Monitoring
- Rectifier Systems



Extendable Container Data Centre

# Power Quality





## Power Quality

Power Quality refers to the state of voltage, current or frequency at an end-user, where deviations may result in failed equipment, process interruptions or power system inefficiency. Our Power Quality offering specialises in ensuring reliable, efficient and compliant electrical systems across industrial and commercial environments.



### Products on Offer

Delta Active  
Power Filters  
(APF)



Delta  
Static VAR  
Generators  
(SVG)



Elspec Power  
Analysers (G4K  
& PureBlack)



Elspec  
Power Factor  
Correction  
(PFC)



### Services Offered

- **Power Quality Audits & Analysis** – Harmonic analysis, voltage stability, and compliance checks.
- **Detailed NRS 048 and IEEE Reports** provided.
- **Harmonic Mitigation Solutions** – Active and passive filters, power factor correction.
- **Load & Energy Studies** – Demand profiling and energy efficiency recommendations.
- **UPS & Backup Power Integration** – Design and commissioning for critical loads.
- **Power Quality Monitoring** – Real-time monitoring and event logging.
- **Consulting & Compliance** – Grid code compliance and technical reporting.
- **Training & Support** – Workshops and on-site training for engineers and technicians.

### Benefits of Our Solutions

**Improved system reliability and reduced downtime.**

**Compliance with international and local standards.**

**Enhanced energy efficiency and cost savings.**

**Protection of sensitive equipment from power disturbances.**

# Delta PQC Series Active Power Filter (APF)

## APF Principle

Delta's PQC Series APF is connected in parallel with non-linear loads, and uses one set of current transformers (CT) to detect the load current. It calculates each order harmonic current by FFT algorithms in its DSP microchips, and then generates a compensating current with the same amplitude but opposite phase angles to the detected harmonic current, which cancels out the original load harmonics.

The PQC series APF not only eliminates harmonic current from the load side, but it also mitigates harmonic voltage caused by harmonic currents. The APF system can also improve power factor (PF) and correct load imbalances in the power system.

Note: CT is a critical part of the APF system, and it can be purchased by users themselves, following Delta's suggestions on CT specification.

## APF Structure

Delta PQC Series APF has a modular design, which adopted 3-level inverter topology with 12 pcs discrete IGBT and DC capacitor components the Delta Active Power Filter system consists of one or several APF modules and a display. There are two types of displays, one is Touch Panel Human Machine Interface (HMI), which is touch-screen type, and the other one is non-touch-screen type, call Liquid Crystal Monitor (LCM).

Each APF module is an independent harmonic filtering system, and users can change the harmonic filtering system rating by adding or removing APF modules.

According to the mounting type, Delta PQC series APF can be divided into Modular APF (rack mounting) and wall-mounted APF.



APF Cabinet



HMI



LCM



Rear Connection Fixed Type APF Module



Front Connection Fixed Type APF Module

## APF Module and Cabinet Solutions

According to cable terminal type, a modular APF can be divided into two types:

- Drawer type modular APF (hot-swappable)
- Fixed type modular APF (not hot-swappable)

Fixed type module contains front connection type module (Power cables and signal cables are fixed from front side) and Rear connection type module (Power cables and signal cables are fixed from rear side).

Control panel has two types:

- LCM
- HMI

APF modules and a control panel can be embedded in Delta's standard APF cabinet or a customised cabinet. There are breakers, cable terminals and Surge Protection Device (SPD) in the APF cabinet. Delta can supply IP30, IP42, IP54 or customised solutions.



Combined wall-mounted IP30 50 A APF



Wall-mounted IP30 100 A APF



Wall-mounted IP54 APF System

## Wall-mounted APF Solutions

Delta's wall-mounted APF can be installed on a wall, which is suitable for low rating applications, and wall-mounted type HMI/ LCM can be installed on the wall-mounted APF module, along with a mounting bracket to provide support and protection. Delta can supply IP30, IP42, IP54 or customised solutions.



# Delta PQC series Static Var Generator (SVG)

## SVG Principle

The principle of the SVG is very similar to that of Active Power Filter, as demonstrated in the picture below. When the load is generating inductive or capacitive current, it makes load current lagging or leading the voltage. SVG detects the phase angle difference and generates leading or lagging current into the grid, making the phase angle of current almost the same as that of voltage on the transformer side, which means fundamental power factor is unit.

Delta's PQC series SVG is also capable of correcting load imbalance.

Note: CT is a critical part of the SVG system, and it can be purchased by users themselves, following Delta's suggestions on CT specification.

## SVG Structure

Delta PQC Series SVG is also in modular structure, which adopted 3-level inverter topology with 12 pcs discrete IGBT and DC capacitor components and the Delta SVG system consists of one or several SVG modules and a display. There are two types of displays, one is Touch Panel Human Machine Interface (HMI), which is touch-screen type, and the other one is non-touch-screen type, call Liquid Crystal Monitor (LCM).

SVG's HMI or LCM can be shared with Delta APF modules. Each SVG module is an independent reactive power compensation system, and users can change the SVG rating by adding or removing SVG modules.



SVG Cabinet



Rear Connection Fixed Type SVG Module



Front Connection Fixed Type SVG Module

## SVG Module and Cabinet Solutions

Fixed type modular SVG module contains Front connection type module (Power cables and Signal cables are fixed from Front side) and Rear connection type module (Power cables and Signal cables are fixed from rear side).

Control panel has two types:

- LCM
- HMI

SVG modules and a control panel can be embedded in Delta's standard APF cabinet or a customised cabinet. There are breakers, cable terminals and Surge Protection Device (SPD) in the SVG cabinet. Delta can supply IP30, IP42, IP54 or customised solutions.



Combined wall-mounted IP30 50kvar SVG System



Integral Wall-mounted IP30 100kvar System



Wall-mounted IP54 SVG System

## Wall-mounted SVG

Delta's Wall-mounted SVG can be installed on a wall, which is suitable for low rating applications, and wall-mounted type HMI/LCM can be installed on the wall-mounted SVG module, along with a mounting bracket to provide support and protection. Delta can supply IP30, IP42, IP54 or customised solutions.

# Elspec's Power Quality Solutions

## Fast, Reliable and Built for Results

Elspec's power quality solutions compensate for full load reactive power demands in less than one network cycle. Our real-time compensation systems stabilise voltage, enhance PF, mitigate Harmonics and reduce voltage flickering & fluctuations in real-time.

Thanks to their transient-free switching technology through precise zero-crossing thyristor control, Elspec's solutions enable quick problem identification, power factor correction and faster decision making. The result is smoother operation, better equipment protection and standard regulations compliance. Built for durability, Elspec's solutions are designed for reliable performance over years of operation.

### Key Component Highlights

#### Heavy-Duty Capacitors

Elspec uses heavy-duty capacitors with enhanced film thickness and thermal ratings, designed to withstand high inrush currents and operate reliably under harsh conditions for longer service life and reduced maintenance. These capacitors are also optimised to absorb and mitigate harmonic currents, supporting cleaner power quality in distorted networks. Capacitor groups are switched on and off using state-of-the-art electronic switching at precise zero-current crossing points. This ensures smooth transitions and eliminates harmful transients often seen in electromechanical PFC systems-greatly extending system life.

#### In-House Iron Core Inductors

Elspec's systems feature premium iron-core copper Inductors, tight tolerance ratings and insulation voltage up to 8,000V. Our Inductors are proudly designed and manufactured in-house at our advanced production facility. By controlling every step of the process, we ensure the highest quality standards (UL approved), precise tolerances and long-term reliability. Our inductors-available in Series 4.2%, 5.67%, 7%, 14% and customised as well. Built with low-loss laminated cores, copper windings and Class H insulation (180°C), each inductor is manufactured under tight tolerances for long-term durability and performance.

#### Advanced Thyristor Switching Modules

Zero-crossing technology ensures smooth, transient-free capacitor switching. UL approved. Supports real-time response for real-time compensation without stress on system components. 2 main module series: Single Group: High power up to 350A, 690V and Three Groups: up to 200A, 480V.

#### Forced Ventilation

Elspec systems use a temperature-controlled forced air cooling system to keep internal components within their optimal operating range. For extreme environmental conditions, integrated air conditioning units can be added to ensure reliable performance even under the harshest temperatures or high ingress protection ratings.



- **Advanced Monitoring & Control**
- **Designed for Harsh Environments**
- **Complies with International Standards**

## Customer Benefits

### Ensures Uninterrupted Production

Elspec's solutions fast response corrects disturbances before they disrupt operations, stabilising power in less than one network cycle to prevent costly downtime and ensure smooth operations. Phase-by-phase correction accurately compensates each phase independently, ensuring optimal performance even under unbalanced load conditions.

### Improves Operational Reliability and Control

Integration with the G4 analyser and PQSCADA Sapphire management software provides real-time monitoring, fast troubleshooting and actionable insights for smarter decisions and better control.

### Maximises Energy Savings

With losses of only about 7%, Elspec's solutions minimise waste, lower operating costs and improve overall system efficiency. By reducing THDv and system losses and leveraging voltage controlled reduction, our technology helps cut unnecessary energy consumption and delivers measurable savings over time.

### Tailored for Every Challenge

Elspec's solutions are engineered to adapt whether it's a compact design for limited space, special installation requirements, or custom development for complex power quality challenges. Every system is tailored to deliver maximum performance in your unique environment.

## System Advantages

### Correction per Phase

Stabilises load, reduces reactive power and fully compensate reactive power demand for each phase separately

### Heavy Duty Design

Extending system lifetime

### Hybrid Capabilities

Eliminates harmonics and enables smooth, stepless compensation

### Multiple Rated Voltage Operation

For both low and medium voltage networks

### Energy saving

Reduces system losses to minimise waste and lower operating costs

### Tailored Design

For limited space and special installation requirements

### Custom Development

For complex power quality requirements

Lighting

Signify

PHILIPS



## Lighting

Lighting innovation with people at the centre.

RT Systems is proud to announce the launch of its new Lighting offering, created to deliver innovative and sustainable illumination solutions. In partnership with Signify (formerly Philips Lighting), we are combining our expertise with the global leader in lighting technology to bring intelligent, energy-efficient systems to market. This collaboration marks an exciting step forward in shaping brighter, smarter, and more sustainable environments for our customers.

**PHILIPS**

**signify**

RT Systems transforms light into more than illumination — it's about people, innovation, and sustainability. With 20+ years of expertise, we merge tradition with cutting-edge technology to deliver intelligent, eco-conscious solutions that help businesses thrive while supporting a brighter future for society and the environment.



### Customer Benefits

LED Lighting  
Systems

Energy-Saving  
Solutions

Colour Control  
Systems

Manual and  
Automated Light  
Management  
System

### Applications

Offices and  
Professional  
Workplaces

Educational  
and Healthcare  
Institutions

Distribution  
Centers and  
Warehousing

Outdoor and  
Architectural  
Lighting

\* information available on request



## Offices and professional workplaces



### SlimBalance G3 SP570P

The SlimBalance G3 SP570P is a versatile linear solution designed for modern office and educational environments.

**Flexible dimensions:** Available in widths of 35 / 60 / 90 / 120 mm and lengths of 600 / 1200 / 1500 mm, enabling seamless integration across multiple applications.

**Geometric design:** Clean linear forms and geometric options support differentiated spatial layouts and architectural expression.

**Optimised installation:** Purpose-built structural design ensures fast, straightforward installation and simplified maintenance.

**Advanced lighting performance:** Equipped with BioUp LED technology, delivering improved MDER compared to standard LED spectra, while maintaining consistent visual color impression.

**Visual comfort:** UGR19 available through customised configurations, enhancing comfort and productivity in office environments.

### GreenPerform Panel RC099V G3

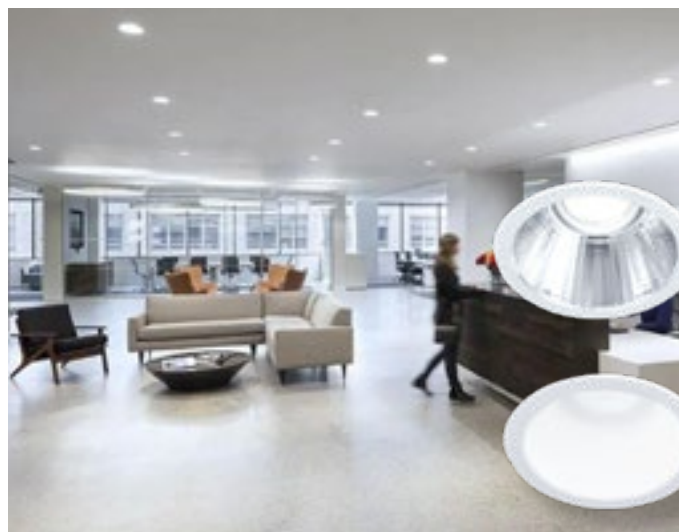
The GreenPerform Panel RC099V G3 is a cost-effective LED panel solution delivering comfortable, uniform illumination for office environments.

**High efficiency:** up to 140 lm/W performance for energy-conscious applications.

**Multiple formats:** available in 600×600 mm, 300×1200 mm, and 600×1200 mm sizes to suit diverse ceiling layouts.

**Visual comfort:** UGR19 option enhances workplace lighting quality and reduces glare.

**Smart connectivity:** compatible with DALI, Interact, and EcoSet systems, enabling seamless integration with building controls for improved energy savings.



### GreenSpace G6 LED Downlight

GreenSpace G6 extends the proven GreenSpace line with compact LED downlights engineered for efficiency and comfort. The recessed architecture with increased reflector depth ensures precise detail rendering and reduced glare.

- Compact housing with deep-set reflector for enhanced visual comfort.
- Wide lumen range: 600–3550 lm.
- Multiple variants: fixed, dimmable, Interact Ready.
- Unified design language across configurations for consistent aesthetics.
- Energy-saving LED technology with reliable performance.

### Application scope

Ideal for projects requiring flexible lighting ambiances with a cohesive luminaire family. GreenSpace G6 supports broad deployment in commercial, retail, and hospitality environments where efficiency and comfort are critical.

## Distribution Centers and Warehousing



### EcoSet Wireless – Highbay BY570 with PIR Sensor

The EcoSet Wireless Highbay BY570 with integrated PIR sensor extends the GreenPerform family's reputation for dependable performance. Engineered with optimised optics for Unified Glare Rating (UGR) control, it delivers high system efficiency, a compact form factor, and long-term reliability. Designed for industrial environments, the BY570 is fully compatible with IoT platforms, including Interact scalable systems.

Automatic energy saving: PIR motion detection, daylight harvesting, and step-dimming functions

High performance lighting: Up to 140 lm/W efficacy

Flexible options: Available in 3 sizes, 4 lumen packages, and 2 CCT variants

#### Key benefits

- Energy efficiency made simple: Automatic savings without complex setup
- Easy commissioning: No gateway, cloud, or app required
- Reduced installation costs: Integrated wireless sensor eliminates need for separate components



Luminaire with wireless PIR/MV sensor

Controller

### GreenPerform Sensor Waterproof G3 L1 W

- Wireless control: EcoSet sensor external wireless solution via BLE technology
- Driver: Integrated wireless driver
- Optics: Two types available for varied applications
- Efficacy: Up to 140 lm/W
- Lengths: 3 options
- Lumen packages: 5 options
- CCTs: 2 options
- Lifetime: 50,000 hours @ L70B50
- Temperature range: -20 °C to +45 °C
- Installation: Suspension or surface mount to ceiling

#### Applications

Canopy, food & beverage industry, parking garages, general industrial areas

GreenPerform Sensor Waterproof G3 L1 W is engineered for simple, wireless energy-saving control. Each luminaire integrates a wireless driver, enabling group control through BLE technology with external sensors or remote controllers.

#### Features & benefits

- Energy efficiency: Seamless wireless control for reduced energy consumption
- Lighting performance: High efficacy with multiple lengths, lumen packages, and CCT options
- Durability: Long lifetime and wide operating temperature range for demanding environments
- Versatility: Two optical designs tailored to different applications
- Ease of installation: Flexible mounting options for quick deployment





## Distribution Centers and Warehousing



### GreenPerform Highbay G5

The GreenPerform Highbay G5 builds on the GreenPerform family's reputation for reliable performance and robust design. With leading system efficacy, compact dimensions, and Unified Glare Rating (UGR) control, it ensures long-term quality in demanding industrial environments. Fully compatible with IoT platforms such as Interact, the G5 offers scalable, future-proof control. The range also includes cold-room variants designed for 100% humidity operation without condensation, making it versatile across almost all industrial applications.

#### Key features & benefits

- Automatic energy saving: PIR/MW sensing, daylight harvesting, and step-dimming functions
- High efficiency: Upgraded performance from 160 lm/W to 170 lm/W
- Flexible options: 3 sizes, 5 lumen packages, and 2 CCT variants
- Award-winning design: Red Dot Design Award 2022 recipient
- Simple energy savings: Automatic functions reduce consumption without complex setup
- Easy commissioning: Gateway, cloud, and app-free configuration
- Installation cost savings: Integrated wireless sensor eliminates need for separate components

### Tango G4 LED Flood Lighting

The Philips Tango G4 LED floodlight is the 4th generation of the Tango family, engineered for higher efficacy, reduced weight, and optimised windage area. Designed for area and recreational sports lighting, it integrates the latest LED source, one-piece optical system, heat sink, and driver into a compact, robust housing that meets global safety standards. Its specially designed heat sink combines aesthetics with functionality, ensuring superior reliability and long lifetime performance.

#### Key features & Benefits

- High efficiency: Typical 140 lm/W system efficacy
- Versatile range: Multiple lumen packages for flood, area, and sports applications
- Flexible optics: Multiple optic options for tailored lighting design
- Durable construction: ADC1 diecast aluminum housing with steel bracket
- Reliability tested: ISO 9227 salt spray fog standard (500 hrs small/medium, 1000 hrs large housing)
- Protection: Rated IP66 and IK08 for harsh environments
- Energy savings: 10% more efficient than Tango G3
- Application coverage: Suitable for a wide range of outdoor lighting needs
- Optimised design: 23% less weight and 35% reduced windage area vs. Tango Gen3
- Enhanced environment: Brighter, safer, and more energetic lighting experience
- Robust reliability: Built for long-term performance in demanding conditions



## Educational institutions and Healthcare - NatureConnect

### Signify NatureConnect

Signify's NatureConnect lighting solution brings the benefits of natural daylight indoors, reconnecting people with the rhythms of nature. Built on the visual, biological, and emotional impact of natural light, NatureConnect mimics daylight patterns to create comfortable, engaging, and inspiring environments. By combining skylight, daylight, and lightscape elements, it delivers immersive experiences that enhance wellbeing, productivity, and spatial quality. With intuitive controls, users can select automatic day rhythm settings or tailor light scenes to specific activities, ensuring the right light at the right time.

#### Key features & benefits

- Daylight indoors: Mimics natural daylight cycles to support circadian rhythm and wellbeing
- Immersive skylight effect: Provides a realistic view to the sky, increasing spaciousness and connection to nature
- Dynamic lightscapes: Natural colors and wall dynamics create engaging, restorative environments
- Flexible control: Automatic day rhythm or selectable natural light scenes via intuitive interface
- Integrated system: Combines LED luminaires, optics, and controls into a seamless solution
- Enhanced wellbeing: Supports alertness, reduces stress, and improves sleep quality
- Productivity boost: Provides the right light at the right time for work and relaxation
- Design versatility: Transforms windowless or dark spaces into inspiring environments
- Future-proof solution: Scalable and adaptable for offices, healthcare, education, and hospitality
- Natural connection: Creates a brighter, healthier, and more human-centric indoor experience



#### Benefits of BMS integration

- Centralised control: Facility managers can manage NatureConnect alongside HVAC, security, and other building systems.
- Energy optimisation: Occupancy and daylight sensors feed into BMS for automated energy savings.
- Human-centric scheduling: Circadian-supportive light recipes can be aligned with building-wide schedules.
- Scalability: Works across offices, healthcare, education, and hospitality environments, supporting both standalone and enterprise-level BMS setups.



### How NatureConnect Integrates into BMS

#### 1. Control protocols

DALI (Digital Addressable Lighting Interface): NatureConnect luminaires are designed to work with DALI-based systems, allowing precise dimming, scene control, and scheduling.

0–10V analog input: Integration with BMS can be facilitated via converters that translate DALI signals into 0–10V, ensuring compatibility with legacy systems.

#### 2. System components

SNS210 IA sensor: Provides occupancy sensing, daylight harvesting, and task tuning at the luminaire level.

Xitanium Sensor Ready Bridge (SR Bridge): Acts as a gateway between NatureConnect luminaires and external control systems.

Digital-to-analog converter (e.g., WaveLinx Wired): Enables connection to BMS platforms that rely on analog inputs.

#### 3. Software integration

Interact Pro app: Used for commissioning, scene setting, and ongoing control. It simplifies integration by offering cloud-free, app-based configuration.

Scene recipes: NatureConnect applies biologically effective light recipes (e.g., Day Rhythm, Energise, Relax) that can be triggered or scheduled via BMS integration.

#### 4. Limitations & workarounds

No native BACnet support: NatureConnect does not directly support BACnet or PRF/PRA APIs.

Integration path: Achieved through DALI-to-analog bridges or via Interact software, ensuring compatibility with existing BMS infrastructure.









## NOTES

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