



The power behind competitiveness

Delta InfraSuite

Data Center Infrastructure Solutions

www.deltapowersolutions.com



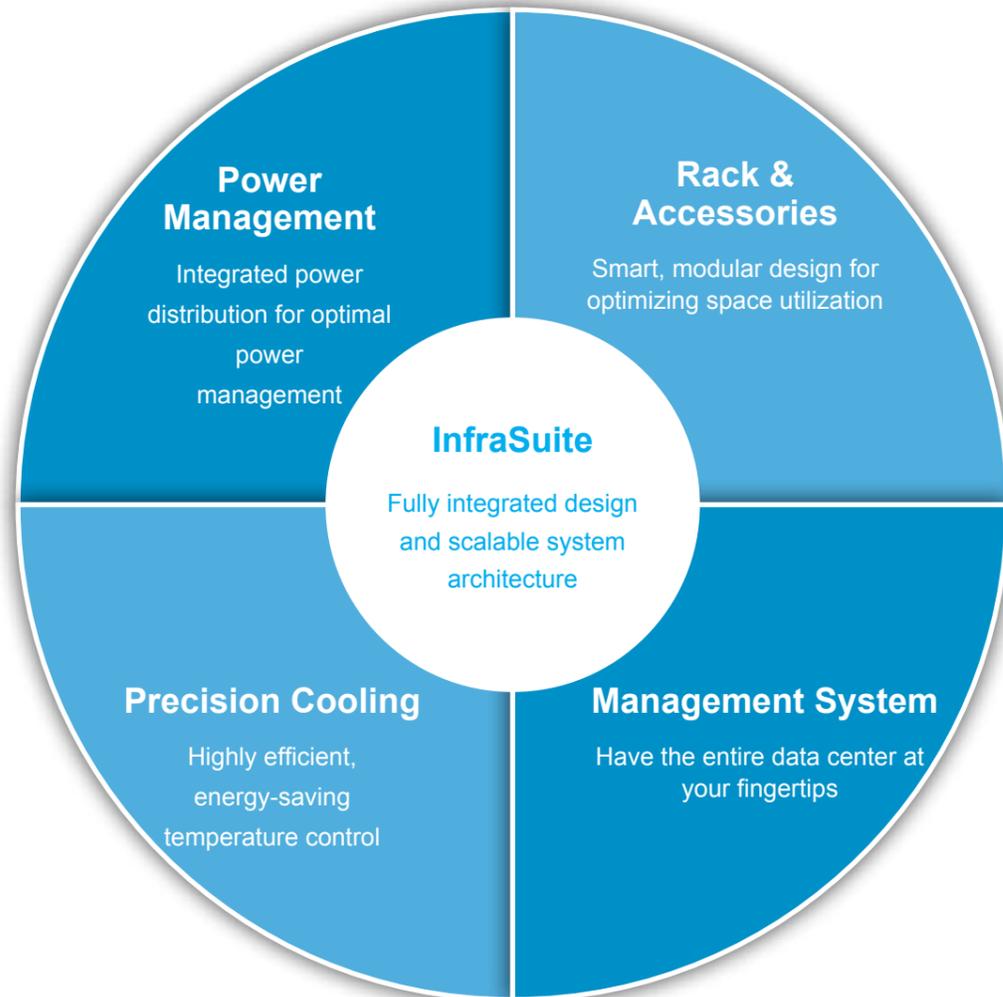
Delta InfraSuite

Data Center Infrastructure Solutions

Enterprise growth and IT equipment have become so closely linked that planning and building a high performance data room is one of the critical issues for IT managers today.

With 40 years of leadership in the core technologies of power electronics, the expert teams at Delta Electronics have developed a new generation of data center infrastructure solutions: InfraSuite.

Delta InfraSuite includes power system, rack & accessories, precision cooling and environment management system.



2007-2008
Forbes Asia's
Fabulous 50



2009 Frost & Sullivan
Green Excellence
Award for Corporate
Leadership



Delta's Manufacturing System is
Certified by ISO 9001 and
ISO 14001 Standards

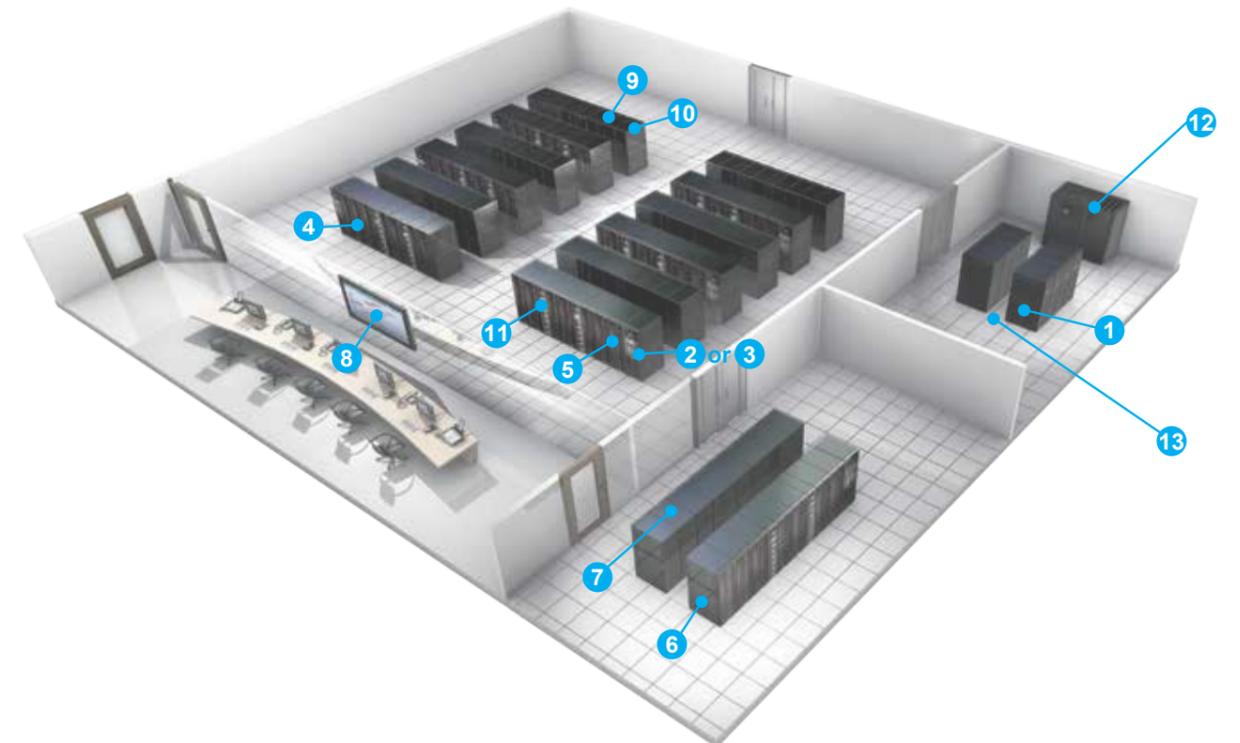
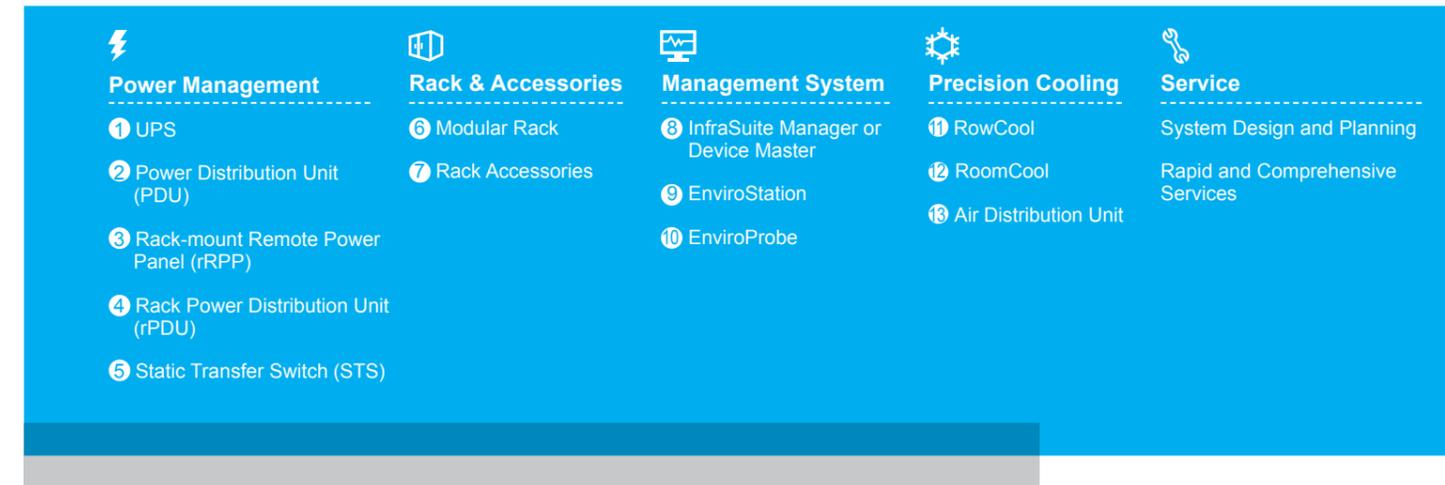


IECQ Certificate of
Hazardous Substance
Process Management

Delta InfraSuite Products and Services

InfraSuite advantages include:

- Modular design for quick and easy assembly
- Scalability to match data center with enterprise growth
- Optimized installation and operation costs
- High efficiency, energy-saving power components for eco-friendly data rooms
- Easy integration with all data room structures
- A complete environment management system for worry-free operations



Delta InfraSuite

Data Center Infrastructure Solutions



Micro Data Center



Modular Data Center



Containerized Data Center



Power Container



DCIM



Cooling



AC Power



Converged Power



InfraSuite Manager (DCIM)

Have the entire data center at your fingertips!

- InfraSuite Manager integrates all facilities and IT equipment on one platform.
- InfraSuite Manager is Delta fully featured DCIM software solution that optimizes data center performance and life cycle management.



Precision Cooling

- Highly-efficient variable fan speed control saves 27% of power if fan speed reduced by 10%



Power Distribution System

- Power Distribution Unit (PDU): Modular and hot-swappable output breaker with transformer
- Remote Power Panel (RPP): PDU without transformer
- Rack-Mount Remote Power Panel (rRPP): An ideal power distribution solution to small datacenters
- Rack Power Distribution Unit (rPDU): Reliable branch circuit breaker protection



Rack and Accessories

- Modular server racks with high perforation rate over 70% which increases heat dissipation
- Avoids cold and hot air mixture to significantly improve PUE < 1.5



UPS System

- Fully modular design. Hot-scalable and hot-swappable.
- Ultra-integrated system with power supply, power distribution and runtime.
- Output PF up to 1
- Leading power efficiency up to 96.5%

Delta UPS

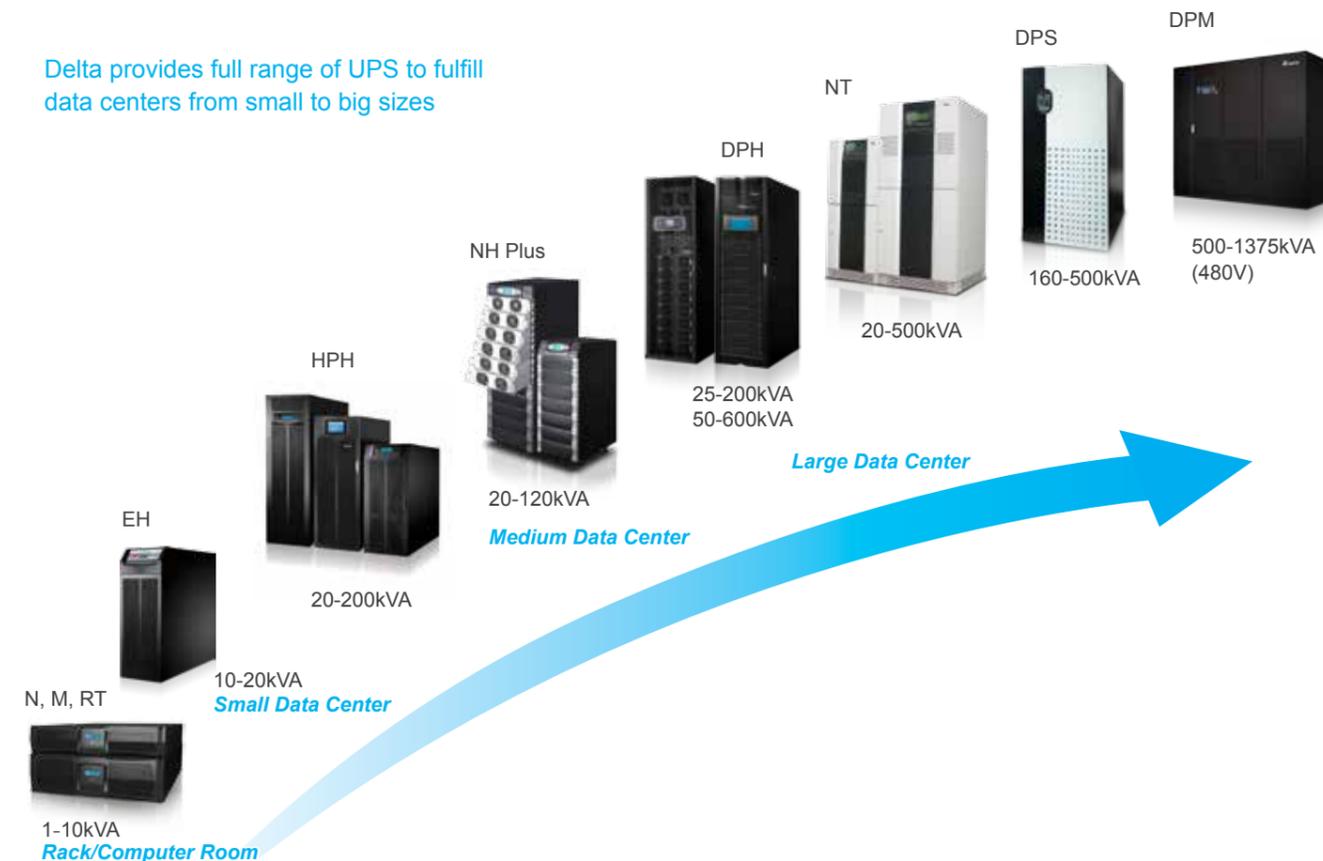
Our clients are most concerned about power issues such as power failure, power sag, power surge, under voltage or over voltage, frequency variation, harmonic distortion and line noise. Delta Electronics emphasizes the areas of redundant power supply, voltage regulation, equipment protection and adjustment and has designed and developed three UPS product families, Amplon, Ultron and Modulon. Their power range, applications and the equipment they protect are listed below:

Product Family	Power	Topology	Applications
Amplon	1kVA or higher	Single-Phase UPS	Server and Network Equipment
Ultron	10kVA or higher	Three-Phase On-Line UPS	Data center and Industrial Equipment
Modulon	20kVA or higher	Three-Phase Modular On-Line UPS	Modular unit expansion and redundant power supply can be achieved within a single rack.

Delta UPS systems feature the following:

- Leading AC-AC Efficiency
- Fully redundant design and configuration
- High input and output power factors
- Easy expansion without additional hardware
- Supports to seamless operations at low level of total cost of ownership (TCO)

Delta provides full range of UPS to fulfill data centers from small to big sizes



Product Application Matrix

	Agilon		Amplon				
	VX Series 0.6-1.5 kVA (line-interactive)	M Series 1-3 kVA (line-interactive)	N Series 1-3 kVA (on-line)	N Series 6-10 kVA (on-line)	R Series 1-3 kVA (on-line)	RT Series 1-3 kVA (on-line)	RT Series 5-10 kVA (on-line)
Configuration 1:1	O	O	O	O	O	O	O
Configuration 3:1							
Configuration 3:3							
Rack mountable		O			O	O	O
Stand-alone	O	O	O	O	O	O	O
Isolation transformer				O			
Battery 'I'	I	I,E	I, E	I, E	E	I, E	E
Home and office *	O	O	O			O	
Small enterprise, IT and medical **		O	O	O	O	O	O
Medium enterprise, telecom, IT, media ***				O			O
Heavy industry, telecom, IT, Industrial ****							

	Ultron				Modulon		
	EH Series 10-20 kVA (on-line)	HPH Series 20-200 kVA (on-line)	NT Series 20-500 kVA (on-line)	DPS Series 160-500 kVA (on-line)	DPM Series 500-1375 kVA (on-line)	NH Plus Series 20-120 kVA (on-line)	DPH Series 25-200 kVA 50-600 kVA (on-line)
Configuration 1:1							
Configuration 3:1	O		O				
Configuration 3:3		O	O	O	O	O	O
Rack mountable							
Stand-alone	O	O	O	O	O		
Modular						O	O
Isolation transformer			O	O			
Battery 'I'	E	I (BN/B), E	E	E	E	E	I (75K), E
Home and office *							
Small enterprise, IT and medical **	O	O	O	O			O
Medium enterprise, telecom, IT, media ***	O	O	O	O	O	O	O
Heavy industry, telecom, IT, Industrial ****	O	O	O	O	O	O	

'I': internal battery, E: external battery

* PCs, laptops, modems, printers, WiFi and audio equipment

** Computers, servers, networking, medical control and diagnostics, education, banking, industrial automation

*** Telecom base stations, data centers, backbone networks, broadcasting, projection systems

**** Telecom centers, data centers, medical equipment at hospitals, government use, automatic control, oil, gas and power utilities, industrial equipment, automation and control

Delta InfraSuite Power Management

Uninterruptible Power Supply, Modulon DPH Series , 25 - 75/150/200 kVA

Achieve the ultimate availability and scalability

The Modulon DPH supports ultimate availability for data center 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.

Ultimate Availability

- Advanced fault tolerance design achieved by self redundancy to guarantee operation continuity
- Self-synchronization of power and control modules for continuous online operation even in the event of control module failure to avoid downtime caused by single point failure
- Hot-swappable key modules and components to ensure Mean Time To Repair (MTTR) close to zero without downtime risk

High Scalability

- Vertical expansion from 25kW to 75/150/200kW supporting N+X redundancy in a single rack enclosure to save footprint
- Parallel expansion up to four units without requiring additional hardware
- Optional Rack-Mount Remote Power Panel (applicable for 75/150kW models) has flexibility to arrange its UPS's output power feeding according to its connected critical loads
- Optional built-in battery modules (applicable for 75kW models) at maximum four units (four battery trays each)

Excellent Power Performance and Efficiency

- Full rated power (kVA=kW) to maximize power availability
- High operating efficiency of 95% at 30% light load and 96% from 50% load resulting in marked energy cost savings
- Low harmonic pollution (iTHD<3%) to reduce upstream investment costs and meet demanding power requirements

Easy Maintenance

- Built-in manual bypass features to eliminate maintenance related downtime
- Proactive detection of fan failure and switch fault for early diagnosis on UPS malfunction
- Plug and play modularity to simplify the maintenance process



Technical Specifications

Model		DPH 75kW System	DPH 150kW System	DPH 200kW System	
Power Rating (kVA)		25, 50, 75	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150, 175, 200	
Frame		75kW	150kW	200kW	
Input	Nominal Voltage	380/220V; 400/230V; 415/240V (3 phase, 4-wire +G)			
	Voltage Range	176~276 / 305~477 Vac *			
	Current Harmonic Distortion	< 3% **			
	Power Factor	> 0.99			
	Frequency	50/60 Hz			
Output	Voltage	380/220V, 400/230V, 415/240V (3 phase, 4-wire +G)			
	Output Power Factor	1 (kVA = kW)			
	Voltage Harmonic Distortion	≤ 2% (linear load)			
	Voltage Regulation	±1% (static)			
	Frequency	50/60 Hz			
	Frequency Regulation	±0.05 Hz			
	Overload Capacity	≤ 125% : 10 minutes ; ≤ 150% : 1 minute			
Interface	Standard	System communication port x 1, LCM port x 1, Parallel port x 2, Smart slot x 2, Output dry contact x 6, Input dry contact x 2, Battery dry contact x 2, REPO			
	Optional	SNMP IPv6 card, ModBus card, Relay I/O card, Battery cabinet temperature sensor cable, Battery cabinet status detection kit			
Conformance	Safety & EMC	BSMI, CE, EN62040-1			
Other Features	Parallel Redundancy and Expansion	Module and system redundancy ; Maximum 4 units			
	Emergency Power Off	Local and remote			
	Battery start	Yes			
	Event Log	3000 records			
Efficiency	AC-AC	96% (Tested by TÜV)			
	ECO Mode	99%			
Environment	Operating Temperature	0 ~ 40 °C			
	Relative Humidity	0 ~ 95% (non-condensing)			
	Audible Noise (at one meter)	< 62 dBA			
	IP Protection	IP20			
Physical	Dimensions (WxDxH)	600 x 1090 x 2000 mm			
	Weight	UPS System	310 kg	320 kg	350 kg
		Power Module	32 kg	32 kg	32 kg
		Rack-Mount Remote Power Panel	32 kg	32 kg	N/A
		Battery Module	29.5 kg	N/A	N/A
System Frame	25kW Power Module	3	6	8	
Maximum Capacity	Rack-Mount Remote Power Panel (rRPP)	1	2	N/A	
	Breaker Module (for Rack-Mount RPP)	6	12	N/A	
	Battery Module	4	N/A	N/A	

* When input voltage is 140/242~176/305 Vac, the sustainable loading is from 60% to 100% of the UPS capacity.

** When input harmonic distortion is less than 1%.

All specifications are subject to change without prior notice.



Scalable and Hot-swappable



Optional rRPP with hot-swappable breaker modules and control modules



Optional hot-swappable battery modules



The Modulon DPH is designed in modern IT aesthetics aligned with Delta InfraSuite data center solutions.

Delta InfraSuite Power Management

Uninterruptible Power Supply, Modulon DPH Series, 50 - 300/500/600 kVA

Cutting-edge Performance and Reliability:

The world's highest power density providing ultimate MW power protection with leading power performance and super reliability

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 center space. Delta's innovative modular UPS technologies provide the answer to customers' demand 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 utilization. The Modulon DPH Series UPS is the ideal modular power protection for MW data centers to achieve total cost of ownership (TCO) optimization.



Highest Power Density



Largest Power in 3U Space



Leading Energy Efficiency



Battery Health Prediction

Excellent Power Performance

- The industry's leading power density per module at 50kW in 3U space, and the smallest footprint for 500kVA in a single rack and 600kVA in two racks, to achieve the best utilization compared with its peers
- High AC-AC efficiency up to 96.5% and ECO mode to 99% resulting in marked energy cost savings
- Green mode featuring a load aggregation function optimizes system efficiency

Ultimate Availability

- Fully modularized design and hot-swappable key modules ensure Mean Time To Repair (MTTR) close to zero without downtime risk
- Redundant components and dual CAN bus delivers highest system availability and avoids single point of failure
- Modular UPS grows with your business by parallel expansion up to 8 units for 4.8MVA of total power capacity

High Manageability

- User-friendly 10" color touch screen enables easy local UPS management
- Environment information such as security, water, fire, and temperature can be integrated into the UPS for easy monitoring via the LCD of the UPS
- If the UPS is equipped with an external battery management system, the battery information can be integrated into the UPS and monitored via the LCD of the UPS



Technical Specifications

Model		DPH 300 System	DPH 500 System	DPH 600 System
Power Rating	kVA	100,150,200,250,300	300,350,400,450,500*	500,550,600
	kW	100,150,200,250,300	300,350,400,450,450	500,550,600
	Power Module Quantity	Up to 6 units	Up to 9 units	Up to 12 units
Input	Nominal Voltage	220/380V, 230/400V, 240/415V (3-phase, 4-wire + G)		
	Voltage Range	176 ~ 276 Vac (full load)		
	Current Harmonic Distortion	< 3%**		
	Power Factor	> 0.99		
	Frequency Range	40 ~ 70 Hz		
Output	Voltage	220/380V, 230/400V, 240/415V (3-phase, 4-wire + G)		
	Voltage Harmonic Distortion	≤ 0.5% (linear load)		
	Voltage Regulation	±1% (static)		
	Frequency	50/60 ± 0.05 Hz		
	Overload Capability	≤125% : 10 minute ; ≤150% : 1 minute ; >150%: 1 second		
Display		10" color touch screen		
Interface	Standard	RS232 x 1, Parallel port x 4, USB type A x 2, USB type B x 1, MODBUS x 1, Smart slot x 1, REPO x 1, EPO x 1, Input dry contact x 4, Output dry contact x 6, External battery temperature dry contact x 4, External switch/breaker status dry contact x 4, BMS (RJ45) x 1, Ethernet x 1		
	Optional	Relay I/O card, Battery cabinet temperature sensor cable		
Conformance	Safety	CE		
Efficiency	AC-AC Mode	Up to 96.5%		
	ECO Mode	99%		
Battery	Nominal Voltage	±240 Vdc		
	Charge Voltage	±272V (adjustable from 204V to 312V)		
	Protection of Battery Deep Discharge	Yes		
Environment	Operating Temperature	0 ~ 40°C		
	Relative Humidity	0 ~ 90% (non-condensing)		
	Audible Noise (at one meter)	< 75 dB	< 80 dB	< 85 dB
	IP Protection	IP20		
Others	Parallel Redundancy and Expansion	Module and system redundancy ; Maximum 8 units		
	Emergency Power Off	Remote (default) and local (optional)		
	Battery Start	Yes		
Physical	Dimensions (W x D x H)	600 x 1100 x 2000 mm		1200 x 1100 x 2000 mm
	Weight : UPS System (without power modules)	311 kg	317 kg	605 kg
	Weight : 50kW Power Module (optional)	36 kg		

* The power module's power rating is adjustable to either 50kVA or 55.6kVA via touch panel.

** When input vTHD is less than 1%.

All specifications are subject to change without prior notice.



Delta InfraSuite Power Management

Power Distribution Unit

For power distribution requirements of medium to large data centers, Delta's Power Distribution Unit (PDU) provides an optimal solution. The space-saving PDU is easy to move and adapt to future reconfigurations of the data center. The PDU offers superior power protection and monitoring, and the flexibility & scalability to match your actual power distribution requirements. Not only does it improve availability, it reduces the cost of your initial investment.



Convenience

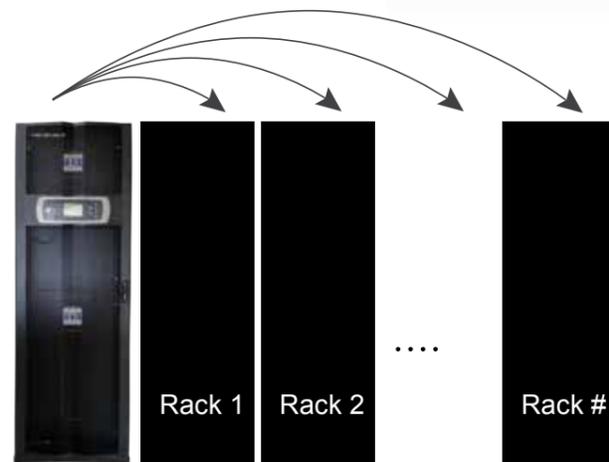
- Configurable circuit breaker panel
- LCD display supporting multiple languages
- Recording more than 500 event logs
- Monitoring the current of each branch circuit breaker
- Built-in RS232 interface for remote monitoring
- Six built-in contact closure outputs
- Two built-in SNMP interfaces increasing availability

Safety

- Local and remote emergency power off functions
- Current unbalance and phase sequence error alarm
- Optional K-factor isolation transformer enhancing safety and reduces harmonics
- Optional lightning surge protection module

Availability

- Easy to relocate, reducing investment costs
- Two built-in sets of panelboards with 42 poles each
- Optional transformers for different output voltages
- Hot-swappable output breaker



▲ Scalable and configurable for present and future demands

Technical Specifications

Model		PDU 80	PDU 125	
Capacity		80 kVA	125 kVA	
Input	Rated voltage	220/380 Vac, 3 phase 3 wire+ ground, or 3 phase 4 wire+ ground		
	Voltage tolerance range	± 15%		
	Frequency	50/60 Hz ± 5% (Automatic detection)		
Output	Rated voltage	220/380 Vac, 3 phase 4 wire+ ground		
	Total switching capacity	Based on actual product specifications		
	Panelboard type	Two sets of panelboards with 42 poles each		
	Shunt switch type	Hot-swap switch capacity: 15 / 20 / 30A, Optional: 1/2/3 pole		
Transformer	Input-Output Type	Δ-Y		
	Efficiency	97.5% (Full-load)		
LCD Display	System	Temperature, ground current, system overheat alarm, V-Loss alarm, voltage imbalance alarm, ground fault alarm		
Blue light 4.9" graphic interface	Input	Phase voltage, line voltage, phase current, line current, load(%), iTHD, total kVA, total kW, total kWh, over voltage/over current alarm, under-voltage/under current alarm, over line current alarm, iTHD abnormal alarm		
	Total output	Phase voltage, line voltage, phase current, line current, frequency, neutral current, load(%), kVA, kW, kWh, power factor, VTHD, iTHD, over voltage/over current alarm, under-voltage/under current alarm, over line current alarm, iTHD abnormal alarm, VTHD abnormal alarm, power factor abnormal alarm		
	Output shunt plate	Phase current, kVA, kW, kWh, load (%), iTHD, power factor, line current, over current alarm, under current alarm, over line current alarm, iTHD abnormal alarm, power factor abnormal alarm		
	Output shunt	Current, load (%), over current alarm, under current alarm		
	Temperature	Environment (instant and alarm), transformers (two stage-alarm)		
	Conformance	Environment	CE	
		Electromagnetic interference	EN55022	
Communication interface		RS232 x 1, dry contact x 6, SNMP slot x 2		
Optional accessories		Lightning protector		
Dimensions (WxDxH)		600 x 1090 x 2000mm (standard 19" cabinet)		
Weight		Excluding transformer: 225 kg Including H transformer: 80kVA: 525 kg, 125 kVA: 630 kg		

All specifications are subject to change without prior notice.

Delta InfraSuite Power System

Rack-Mount Remote Power Panel

Delta's rack-mount Remote Power Panel (rRPP) is an ideal power distribution solution to small data center up to 80kVA. Composed of a 4U cabinet, the rRPP can be perfectly integrated with standard server racks and results in saving valuable data center space. For high requirement of data center reliability, it also provides excellent branch protection and branch monitoring functions. The rRPP is a superior solution of power distribution management and reduces the total cost of ownership (TCO) of your small data center.

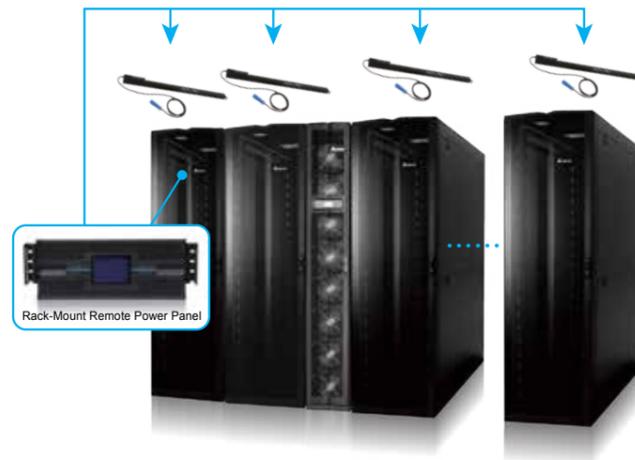


High Flexibility

- Provides three different rated power levels, 30kVA, 50kVA and 80kVA, for your selection
- The highly scalable design allows installation of at maximum six hot-swappable breaker modules (optional), which means that it can connect at maximum 18 branches
- Various accessories are available for options like TVSS module, main input breaker and SNMP IPv6 card

High Reliability

- Detects any hot-swappable breaker module's branch current
- Provides abnormal voltage and phase-lack alarms
- Provides system and each branch's current monitoring and alarm functions
- Intelligently judges the specifications of each hot-swappable breaker module installed
- Smartly monitors each latch is closed or open, each branch's status and the optional main input breaker's status
- Provides REPO function



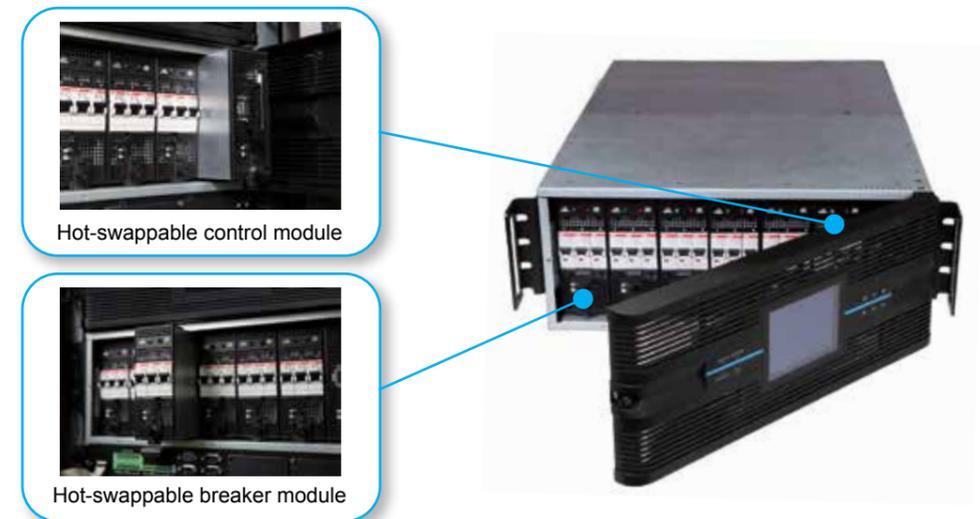
Convenience

- User-friendly 4.9-inch LCD interface
- Built-in RS-232 port and smart slot allow remote monitoring
- Records at maximum 2000 event logs
- Provides 6 sets of output dry contacts

Technical Specifications

Model	Rack-Mount RPP	
Input	Nominal Voltage	220/380V; 230/400V; 240/415V (3-phase, 4-wire + G)
	Voltage Range	220/380V ±15%
	Frequency Range	50/60Hz ± 5%
	Main Input Breaker	63/100/160 A
Output	Full Load Rating	30/50/80 kVA
	Nominal Voltage	220/380V; 230/400V; 240/415V
LCD Display	Total output: Current, load (%), kVA, kW, kW.h and temperature Each branch: Load (%), current and kW.h	
Interface	Standard	RS-232 port x 1, CAN Bus port x 1, Smart slot x 1, Output dry contact x 6, REPO x 1
Environment	Operating Temperature	0 ~ 40°C
	Relative Humidity	90% (non-condensing)
	Audible Noise	<70 dBA in normal mode (at a distance of 1 meter in front of the Rack-Mount Remote Power Panel)
	Protection (IP Degree)	IP 20
Others	Parallel Redundancy	N/A
	Emergency Power Off	Yes (Remote)
Physical	Dimensions (WxDxH)	430 x 665 x 173 mm
	Weight	38 kg (Max.)
	Hot-Swappable Breaker Module	1~6 (at maximum 18-pole supported)

All specifications are subject to change without prior notice.



Delta InfraSuite Power Management

Delta Cast Resin Busway System

With the brand vision “Smarter, Greener, Together,” Delta has utilized its industry-leading power electronics technology to develop the Busway BR Series for data center applications. Different from a conventional power cable system or sandwich busway solutions, Delta has adopted epoxy cast resin technology to significantly increase IP protection level, safety, and reliability. Delta's solution is ideal for use in a variety of industries and climate conditions. The superior electrical and mechanical characteristics of resin minimize the Busway BR Series' dimensions and simplify its structure. The Busway BR Series also has an extended product life cycle, increased reusability, and achieves significant energy savings for customers.

Customer Value

The Busway BR Series features:

- Continuous plug-in core technologies available for expansion and power distribution. Data centers can use them freely
- Ultra safe solution that satisfies the requirements of data centers
- Conforms to different standards, depending on market or customer needs, such as IEC, CNS and GB
- Space-saving and weight-saving solution that overcomes space and loading problems of the data center.
- Highly integrated composite materials that significantly reduce EMC and protect precision devices in the data center, and are safe for human health.

Delta's Busways vs, Traditional Cable

Delta's Busways excel over traditional cables in terms of safety, electrical properties, reliability, and scalability, making them the best choice for companies looking at optimum TCO.

	Cast Resin Busway System	Typical Power Distribution by Cables
System flexibility	Easily detaching joints, replaceable, re-usable and highly adaptable to system design changes	Need re-wiring in case of system changes
Installation and configuration	Quick installation and configuration	Wiring over premises, costly and time-consuming
Space use efficiency	Only 30% of traditional cable wiring, effective in saving installation space	Power distribution by cable needs PDU or RPP that occupies white space
Appearance	Easy to identify and manage at a glance	Messy power wiring, complicated looks
Fire resistance	High, IEC60331	None
IP Rating	The protection level is primarily IP20 for data center applications. It can reach up to IP 54 per requirement	Not specified in the general technical data
Resistance to chemical and corrosion	Excellent	Poor
Instantaneous short-circuit strength	High	Low
Overload capacity (+25% 2hrs)	High	Low in heat resistance (up to about 60 °C), thus being dangerous when overloaded, leading to accelerated insulating materials aging and reduced service life
Insulation rating	High, resin insulation Class F (155°C).	Low

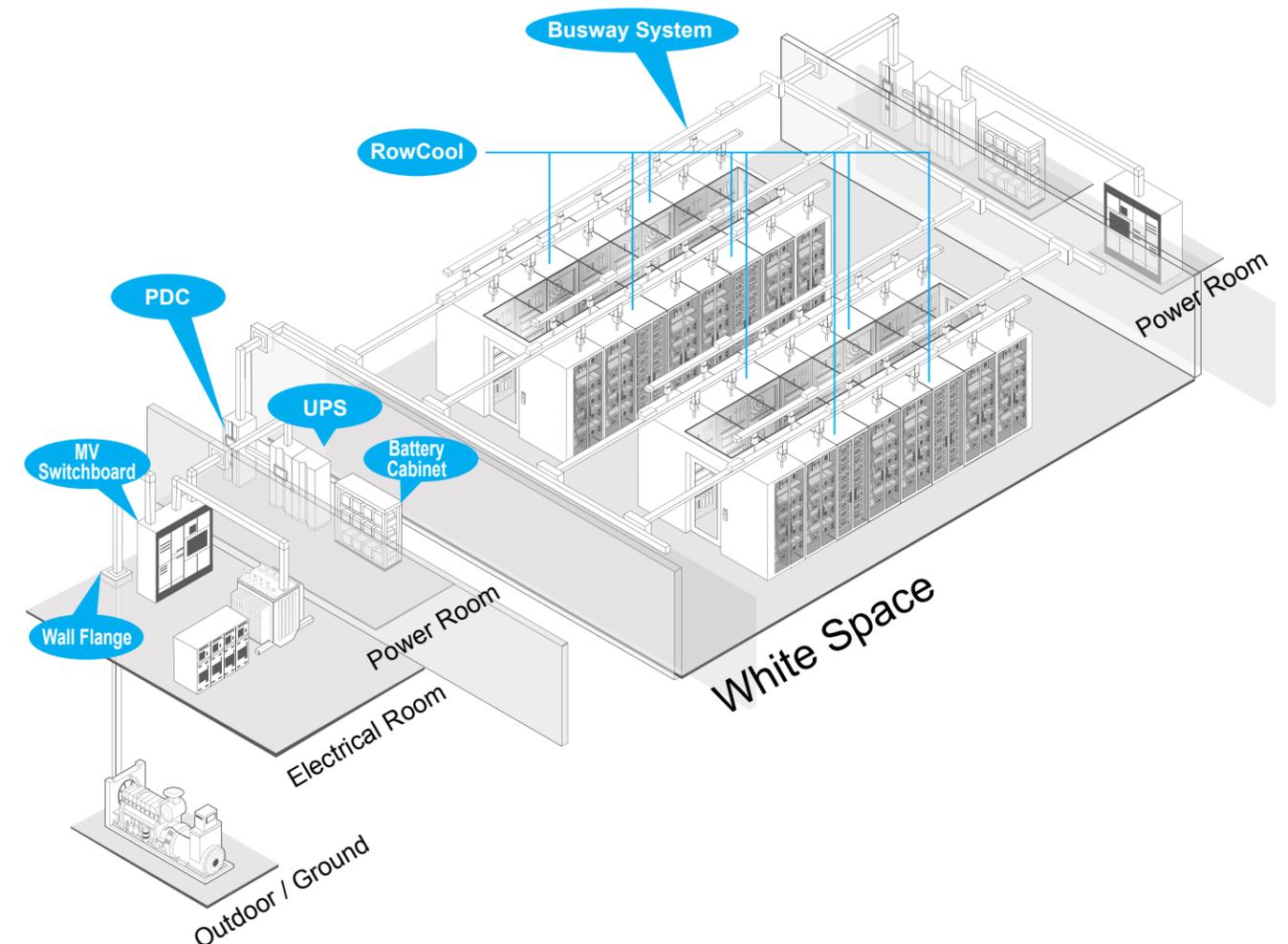
Busway for Data Center Applications

With the recent wave of Big Data and IoT, data centers are responsible for more computing, communication and storage functions. In addition to the increase of their scope, the power density of a single rack cabinet has gradually increased. Effective space utilization is a great challenge for data center construction.

The Delta Cast Resin Busway System BR Series is exclusive for data center applications. Thanks to the epoxy insulation technology, it has a compact structure and size, as well as low EMC that allows it to overcome space limitations in server rooms. Data center designers can easily do wiring construction close to data cables without fear of an impact on their health due to low electromagnetic radiation.

In addition, the plug-in unit can be customized per customers' requirement. It is flexible for use with different power supply systems of server racks. The plug-in unit also applies the flexible “Continuous Plug-In” core technology and is hot swappable. Therefore, it is not constrained by data center space. Customers can carry out expansion or distribution anywhere, which is very flexible.

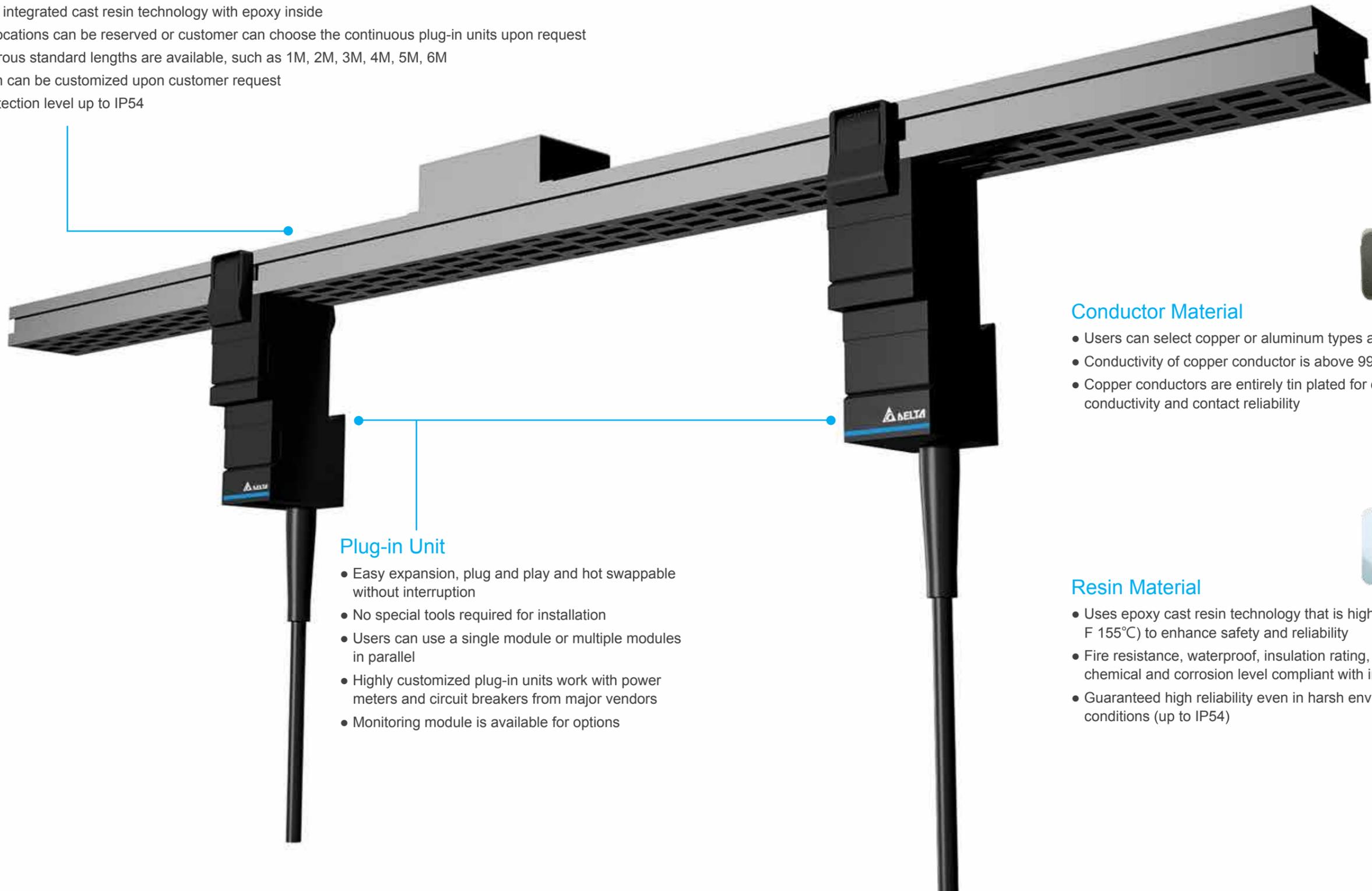
Busway Systems in Data Center



Product Advantages

Busway Body

- Wide power ratings ranging from 250A to 1600A
- Up to 200% neutral
- Highly integrated cast resin technology with epoxy inside
- Pole locations can be reserved or customer can choose the continuous plug-in units upon request
- Numerous standard lengths are available, such as 1M, 2M, 3M, 4M, 5M, 6M
- Length can be customized upon customer request
- IP protection level up to IP54



Plug-in Unit

- Easy expansion, plug and play and hot swappable without interruption
- No special tools required for installation
- Users can use a single module or multiple modules in parallel
- Highly customized plug-in units work with power meters and circuit breakers from major vendors
- Monitoring module is available for options

Conductor Material

- Users can select copper or aluminum types as needed
- Conductivity of copper conductor is above 99.9%
- Copper conductors are entirely tin plated for optimum conductivity and contact reliability

Resin Material

- Uses epoxy cast resin technology that is highly insulating (Class F 155°C) to enhance safety and reliability
- Fire resistance, waterproof, insulation rating, resistance to chemical and corrosion level compliant with industrial standards
- Guaranteed high reliability even in harsh environmental conditions (up to IP54)

Delta InfraSuite Power Management

Rack Power Distribution Unit

Delta's rack power distribution units (rPDUs) provide optimal power distribution for devices inside a rack. In addition to easily distributing power to equipment, rPDUs also provide complete power protection. Delta offers a range of basic and metered rPDUs that you can install vertically or horizontally inside a rack. It makes establishing a data center more efficient.



■ Metered Rack PDU

Availability

- Tool-less installation in Delta's standard rack cabinets
- Brackets included for mounting in other brands' rack cabinets
- Zero-U installation saving valuable rack space
- Single or three phase input voltage available

Safety

- LED current (rms value) display and overload warning indicator
- Branch circuit breaker protection
- International standards of cables and power plugs/receptacle

Management

- Upgradable firmware for maintaining optimal function
- Integrated with the InfraSuite management software
- Optional SNMP card for remote monitoring

■ Basic Rack PDU

Availability

- Tool-less installation in Delta's standard rack cabinets
- Brackets included for mounting in other brands' rack cabinets
- Vertical or horizontal mounting method, saving valuable rack space
- Single phase or three phase input voltage available

Safety

- Branch circuit breaker protection
- International standards of cables and power plugs/receptacle



Technical Specifications

Model	Input Phase	Plug Type	Cable Length	Nominal Input Voltage (Vac)	Input Voltage Range	Output Voltage / Phase	Number of Output Circuit Breakers	Outputs (Number)	Conformance	LED	Communication Interface	SNMP Card	Dimensions (WxHxD)	Weight
PDU1113	1	NEMA L5-30P	2.4m	100-120	± 10 %	100-120 Vac / 1	20A/2P Two (UL489)	NEMA 5-15/20R (24)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	5.34kg
PDU1211B	1	IEC309-20A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P Two (UL489)	IEC320 C13 (24)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	4.60kg
PDU1213	1	NEMA L6-30P	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/2P Two (UL489)	IEC320 C13 (24)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	5.24kg
PDU1311	1	IEC309-16A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/2P One (UL489)	IEC320 C19 (3) IEC320 C13 (24)	CE, CCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	4.56kg
PDU1313B	1	IEC309-30A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P Two (UL489)	IEC320 C13 (24) IEC320 C19 (4)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	5.12kg
PDU1315	1	IEC309-32A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/2P Two (UL489)	IEC320 C19 (4) IEC320 C13 (24)	CE, CCC	Yes	RS232-1, RS232-2	Option	48x1250x50/90 mm	5.44kg
PDU1425	3Y	IEC309-32A-5W	1.8m	346-415	± 10 %	200-240 Vac / 1	35A/2P Three (UL489)	IEC320 C19 (9) IEC320 C13 (3)	CE, CCC	Yes	RS232-1, RS232-2	Option	48x1250x50/100 mm	6.45kg
PDU1425-T	3Y	IEC309-32A-5W	2.4m	346-415	± 10 %	200-240 Vac / 1	35A/2P Three (UL489)	IEC320 C13 (3) IEC320 C19 (15)	CE	Yes	RS232-1, RS232-2	Option	48x1560x50/100 mm	7.22kg
PDU2316B	1	IEC309-60A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P Three (UL489)	IEC320 C13 (36) IEC320 C19 (3)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1560x50/90 mm	7.94kg
PDU2421	3Y	IEC309-16A-5W	1.8m	346-415	± 10 %	200-240 Vac / 1	20A/2P Three (UL489)	IEC320 C19 (3) IEC320 C13 (36)	CE, CCC	Yes	RS232-1, RS232-2	Option	48x1560x50/90 mm	6.06kg
PDU2525	3 Δ	CS8365C	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/2P Three (UL489)	IEC320 C13 (36)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1560x50/100 mm	8.00kg
PDU4425	3Y	IEC309-32A-5W	2.4m	346-415	± 10 %	200-240 Vac / 1	35A/2P Three (UL489)	IEC320 C13 (36) IEC320 C19 (3)	CE	Yes	RS232-1, RS232-2	Option	48x1660x50/100 mm	8.30kg
PDU4425-M	3Y	IEC309-32A-5W	1.5m	346-415	± 10 %	200-240 Vac / 1	35A/1P Three (CE/VDE)	IEC320 C13 (24) IEC320 C19 (3)	CE	Yes	RS232-1, RS232-2	Option	48x1535x50/100 mm	7.10kg
PDU5113	1	NEMA L5-30P	2.4m	100-120	± 10 %	100-120 Vac / 1	20A/1P Two (UL489)	NEMA 5-15/20R (24)	UL/cUL	X	X	-	48x1250x50/90 mm	4.88kg
PDU5213	1	NEMA L6-30P	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/2P Two (UL489)	IEC320 C13 (24)	UL/cUL	X	X	-	48x1250x50/90 mm	4.92kg
PDU5315	1	IEC309-32A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P Two	IEC320 C19 (4) IEC320 C13 (24)	CE, CCC	X	X	-	48x1250x50/90 mm	4.90kg
PDU7111	1	NEMA L5-20P	2.4m	100-120	± 10 %	100-120 Vac / 1	20A/1P One	NEMA 5-15/20R (8)	UL/cUL	X	X	-	440x44x55 mm	1.56kg
PDU7211	1	NEMA L6-20P	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P One	IEC320 C13 (12)	UL/cUL	X	X	-	440x44x55 mm	1.64kg
PDU7311	1	IEC309-16A-3W	2.4m	200-240	± 10 %	200-240 Vac / 1	20A/1P One	IEC320 C13 (12)	CE, CCC	X	X	-	440x44x55 mm	1.48kg
PDU7425	3Y	IEC309-32A-5W	2.4m	346-415	± 10 %	200-240 Vac / 1	20A/1P Six	IEC320 C19 (6)	CE, CCC	X	X	-	440x44x250 mm	4.80kg
PDUE421B	3Y	IEC309-20A-5W	2m	346-415	± 10 %	200-240 Vac / 1	20A/1P Three (UL489)	IEC320 C13 (36) IEC320 C19 (3)	UL/cUL, FCC	Yes	RS232-1	Built-In	58x1750x60/100 mm	6.86kg
PDUE423B	3Y	IEC309-30A-5W	2m	346-415	± 10 %	200-240 Vac / 1	20A/1P Six (UL489)	IEC320 C13 (6) IEC320 C19 (18)	UL/cUL, FCC	Yes	RS232-1	Built-In	58x1750x60/100 mm	8.30kg
PDUE428	3Y	IEC309-63A-5W	2m	346-415	± 10 %	200-240 Vac / 1	20A/1P Nine (CE/VDE)	IEC320 C13 (6) IEC320 C19 (18)	CE	Yes	RS232-1	Built-In	58x1750x60/100 mm	13.40kg
PDUE428II	3Y	IEC309-63A-5W	2m	346-415	± 10 %	200-240 Vac / 1	20A/1P Nine (CE/VDE)	IEC320 C13 (36) IEC320 C19 (18)	CE	Yes	RS232-1	Built-In	56x2325x60/100 mm	15.10kg
PDUE525	3 Δ	CS8365C	1.8mm	200-240	± 10 %	200-240 Vac / 1	20A/2P Three (UL489)	IEC320 C13 (30) IEC320 C19 (6)	UL/cUL, FCC	Yes	RS232-1, RS232-2	Option	48x1780x50/100 mm	9.00kg
PDUE928	3 Δ	IEC309-63A-4W	2m	200-240	± 10 %	200-240 Vac / 1	20A/2P Six (CE/VDE)	IEC320 C13 (12) IEC320 C19 (12)	CE	Yes	RS232-1	Built-In	58x1750x60/100 mm	12.80kg

All specifications are subject to change without prior notice.

Interface

Interface	Function
RS232-1	Connect to a PC for remote operation or a firmware upgrade
RS232-2	Connect to an SNMP card or to another rPDUs

Delta InfraSuite Power Management

Static Transfer Switch

The Static Transfer Switch (STS) safeguards the uninterrupted operation of mission critical IT equipment. Powered by two independent power sources, the STS rapidly switches from one source to the other automatically when the power supply used to power its connected load fails.

For data center applications the STS allows power drop risk to be shared or distributed to each rack to prevent power loss for the whole system. The STS offers an efficient and reliable switch that supports the high redundancy requirements of mission critical power systems.

Availability

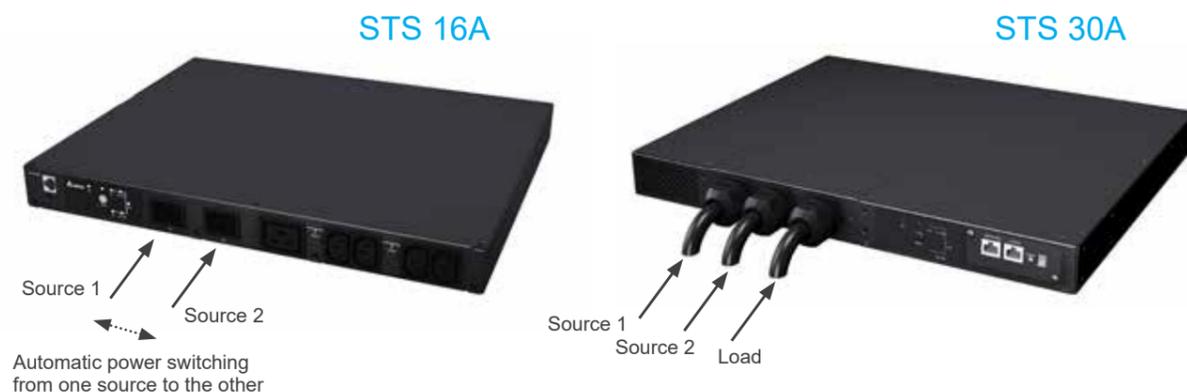
- Adopts SCR with a relay in parallel as a switching device to increase reliability without sacrificing efficiency.
- Supports power redundant configurations for high reliability
- Monitors the health of the power source and performs the transfer automatically

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



▲ Supports power redundant configurations for high reliability

Technical Specifications

Model	STS16002SR	STS30002SR
Rated Current	16A	30A*
Regulatory	CE / UL	CE
Nominal Voltage	200/208/220/230/240 Vac	
Display	LED	
Connection	Input : C20 x 2 pcs Output : C13 x 4 + C19 x 1 pcs	Input : IEC309 / Hardwired Output : IEC309 / Hardwired
Communication	SNMP	
Operating temperature	0 ~ 40°C	
Typical Transfer Time	6 ~ 10ms	
Storage temperature	-15 ~ 50°C	
Humidity	0% ~ 95% RH (non-condensing)	
Audible Noise (at one meter)	< 40 dB	
Physical Dimensions (H x W x D)	43mm x 440mm x 385mm	43mm x 440mm x 385mm / 43mm x 440mm x 390mm
Weight	4.85 kg	7.6 kg / 6.2 kg

* Under the condition of 35 °C; if the environment temperature is 36-40 °C, the product should be de-rated to 25.6A. All specifications are subject to change without prior notice.

STS 16A

STS 30A



2007~ 2008 Forbes Asia's Fabulous 50



2009 Frost & Sullivan Green Excellence Award for Corporate Leadership



Delta's Manufacturing System is Certified by ISO 9001 and ISO 14001 Standards



IECQ Certificate of Hazardous Substance Process Management



Delta InfraSuite Rack & Accessories

Modular Rack

The modular rack is essential gear for data centers. Delta has developed a modular rack that increases space utilization and heat dissipation via 70% perforation to meet high density IT room requirements.



Convenience

- Tool-less installing and removing & reversing front and rear doors
- Removable power trough on the roof neatly managing power, network and optic cables
- Tool-less removable roof cable ports for easier cable access and management
- Removable bottom cover allowing cable access through raised floor
- Casters for convenient moving
- Front and rear U-position numbers for easy installation
- Easy to join racks in a row for a clean and secure data room
- Front and rear doors open up to 130° for convenient installation and repair
- Full range of accessories supporting a well-managed and organized data room

Flexibility

- Split rear doors reducing space required for hot aisles and simplifying maintenance
- Adjustable mounting rails with numbered guides helping adjust depth for different installation needs
- Four multipurpose mounting bays for installing 0U PDU or vertical cable trough
- Fully meeting industry-standard EIA-310 rack requirements

Safety

- Supporting up to 1420kg static weight
- IP20 environment protection rating
- Adjustable leveling feet for stability and security
- Front and rear doors grounded to the rack
- Front and rear doors with locks



Roof Cable Trough



Vertical Position Marks



4 Universal Mounting Brackets



Roof Cable Ports & Covers

Conformance

Protection Rating	IP20
Rack Standards	EIA-310-D
Safe Grounding	UL 60950 (max. 63A)
Environmental	RoHS

Environment

Temperature	Operating: 0 ~ 40°C Storage: -15 ~ 50°C
Relative Humidity	Operating: 0 ~ 95%
Elevation	Operating: 0 ~ 3000m



Physical

Item	Model	W (mm)	H (mm)	D (mm)	Packing Dimensions W x H x D (mm)	Net Weight (kg)
1	SR3110	800(19")	2000	1100	830*1160*2156	150
2	SR1110	600	2000	1100	630*1160*2156	137

These specifications are subject to change without notice. Please contact us or our distributors in your region for the latest specs.



Delta InfraSuite Rack & Accessories

Rack Accessories



1U Fixed Shelf

Model SR9004
Load Capacity (kg) 60
Dimensions (mm) W480.5xD664xH44



1U Sliding Shelf

Model SR9005
Load Capacity (kg) 40
Dimensions (mm) W482xD718xH44



Bottom Cover

Model SR9003/SR8003
Dimensions (mm) W538xD834.6xH39
/W738xD834.6xH39



Cable Ladder

Model SR7003
Dimensions (mm) W300xD50xH1560



1U Blanking Panel

Model SR9006
(10pcs/per box)
Dimensions (mm) W482.6xH43.7xT1.0



2U Blanking Panel

Model SR9007
(10pcs/per box)
Dimensions (mm) W482.6xH88xT1.0



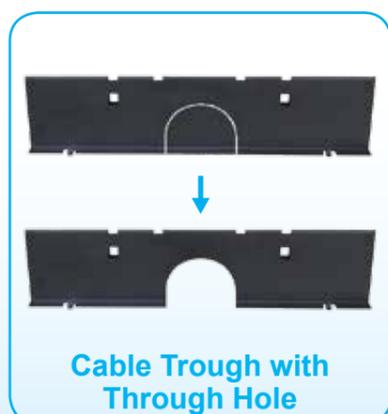
Power Cable Trough with Through Hole

Model SR9001/SR8001
Dimensions (mm) W580xD316xH192
/W780xD316xH192



Ring Type Wire Holder

Model SR7004 (10 pcs)
Dimensions (mm) W45xD85xH5



Cable Trough with Through Hole

Model SR9002 / SR8002
Dimensions (mm) W592xD75xH125
/W792xD75xH125



Vertical Cable Management Channel

Model SR7002 (2 pcs)
Dimensions (mm) W53xD63xH888



1U Horizontal Cable Management Channel

Model SR7001
Dimensions (mm) W482xD50xH44



Accessory List

Model	Description	SR1110	SR3110
SR7001	1U HORIZONTAL CABLE MANAGEMENT	●	●
SR7002	VERTICAL CABLE MANAGEMENT CHANNEL	●	●
SR7003	CABLE LADDER,300 mm	●	●
SR7004	RING TYPE WIRE HOLDER (10 pcs/per box)	●	●
SR8001	POWER CABLE TROUGH WITH THROUGH-HOLE,800 mm		●
SR8002	CABLE TROUGH WITH TROUGH-HOLE,800 mm		●
SR8003	BOTTOM COVER FOR W800*D1100 RACK CABINET		●
SR9001	POWER CABLE TROUGH WITH THROUGH-HOLE,600 mm	●	
SR9002	CABLE TROUGH WITH TROUGH-HOLE,600 mm	●	
SR9003	BOTTOM COVER FOR W600*D1100 RACK CABINET	●	
SR9004	1U FIXED SHELF	●	●
SR9005	1U SLIDING SHELF	●	●
SR9006	1U BLANKING PANEL (10 pcs/per box)	●	●
SR9007	2U BLANKING PANEL (10 pcs/per box)	●	●

These specifications are subject to change without notice. Please contact us or our distributors in your region for the latest specs.

Delta InfraSuite Management System

InfraSuite Manager - Data Center Infrastructure Management (DCIM)

“Due to rapid technology advances, enterprises are demanding centralization of management processes and also a consolidation of infrastructure into a centralized location; limited availability of computing resources, power and space has led to an increasing demand for DCIM (Data Center Infrastructure Management) solutions.”

- Global Data Center Infrastructure Management Market
Technoavio, 2016

The velocity of its growth, coupled with its real and tangible benefits makes understanding DCIM important not just for facility managers, but also for CIOs and IT managers. Delta InfraSuite Manager is the fully featured DCIM software solution to deliver automation and visibility into the data center and increase the ease of management on a comprehensive platform. InfraSuite Manager optimizes the performance and life cycle management of the data center.



Benefits of InfraSuite Manager

Central View from One Platform

InfraSuite Manager provides users a central view to observe all of the critical information for a data center based on a single real-time platform.

Cost Effective

Organizations with corporate operation of cost efficiency initiatives can also look to DCIM to better manage and optimize resource use across their entire infrastructure, as well as help lower their impact on the environment. PUE (Power Usage Effectiveness) is improved and costs are reduced accordingly.

Increased Availability

By viewing critical information in the data center, the availability of the data center has been increased. InfraSuite Manager offers advanced alert algorithms across the infrastructure. It helps the data center mitigate the risk of downtime.

Sustainability Management

Having insight into the future of the data center's day-to-day operations, and understanding how to optimize the data center's resource allocation is invaluable to a business. InfraSuite Manager not only enhances capacity and asset management but also improves overall productivity, which can extend the data center life cycle.

Empower your data center

For Facilities Managers



- Overall layout of your data center
- Overall environment mapping or profile of your data center
- All equipment status
- Chiller plant status and profile
- Power diagrams
- Alarm notification and reporting

For IT Managers



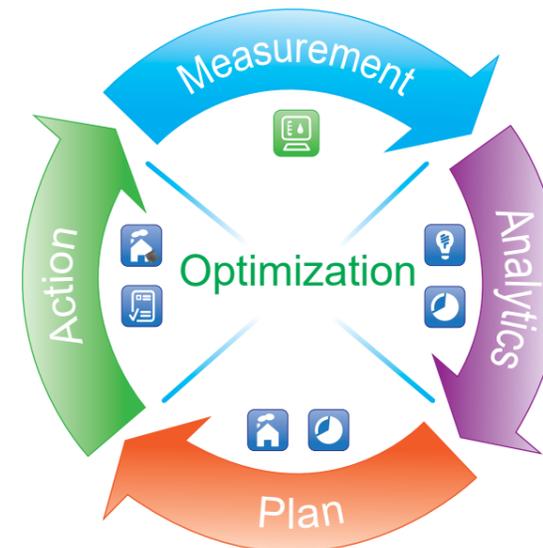
- Access control and surveillance
- Asset management
- Rack utilization, rack U-space, weight, power load and network port for each rack
- Multiple site management
- Alarm notification, reporting and schedule
- IPMI

For Chief Information Officers CIOs



- Real time and historical PUE
- Electricity cost and billing
- Overall capacity utilization
- Work order progress and approval process
- Alarm notification and reporting

Management Philosophy for Data Center Optimization



Measurement

Measure and monitor the overall data center environment in real-time from a central dashboard

Analytics

Create a virtual model of the infrastructure to digitally map the relationships between all these components

Plan

Manage the data center better based on insightful historical information and trend analysis with well-grounded planning

Action

Define actionable solutions and configurations to execute

Product Features



Base Model (Operation)



Energy



Slide Show



Asset



Capacity



Work Order



Asset Inspection



Base Model (Operation Platform)

The base model of the InfraSuite Manager provides real-time critical information for a data center across floors or locations. It also gives recommendations on how to resolve issues, and offers a built-in report generator tool and template that provide device information and trend charts in the reports. The base model is the fundamental monitoring platform and extensional function modules can be added according to the demands of enterprises or organizations. The communication architecture of InfraSuite Manager uses Master/Slave and Browser/Server architecture for the Windows client and web browser user interface.

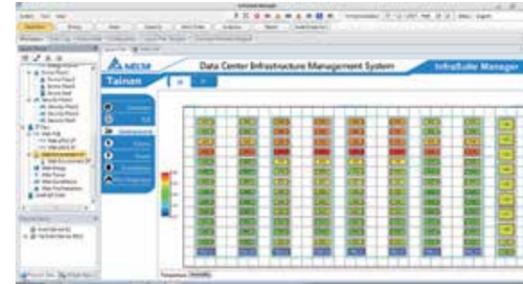


FIGURE 1. Overview of Data Center - Temperature



PUE Energy Module

The Energy Module of the InfraSuite Manager contains the functions of energy measurement, PUE calculation, electricity tariff formula, and historical data analysis. In addition, it includes organizational energy classification and management mechanism. With time and experience operating this system, datacenter managers develop greater agility for managing energy consumption. This module can transform energy consumption data collected from power meters, UPS (Uninterruptible Power Supply), PDU (Power Distribution Unit) and environment detectors into dynamic charts and graphs, including line charts, bar charts, and pie charts based on user preference.



FIGURE 2. Dashboard of PUE



Energy Analysis Module

Energy Analysis is not just for a single site but for the entire organization. The electricity tariff formula can be customized for each department. In terms of detailed energy analysis, Delta offers diverse scenario analyses, including energy usage KPI, comparison, energy combination analysis, abnormal energy usage ranking, and energy usage estimation.

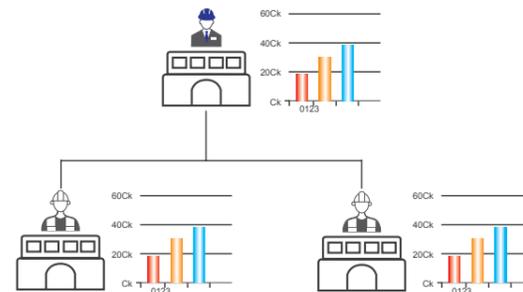


FIGURE 3. The Hierarchy of Energy Analysis



Asset Module

Asset Module offers graphical views of assets in every single rack in the data center. This makes it easy to quickly identify the power path and network topology map. In the case of assets without proper management, it often leads to a higher mean time to repair (MTTR) and lowering the availability of the data center's equipment.



FIGURE 4. Asset Module - Rack Management



Capacity Module

Capacity Module allows data center managers to plan for the future more effectively through the use of detailed data on rack space, weight, network, power and cooling capacity in the data center. For example, Capacity Module helps data center managers evaluate resource consumption, making it easier for them to plan and decide on the future allocation and most suitable installation locations for IT devices.



FIGURE 5. Automatic Availability Calculation



Work Order Module

The Work Order Module provides a highly customizable platform that enables users to design work order templates for different management purposes. Different variables such as names, types, priority, schedule, roles of tasks can then be set by the administrator. This helps users not only simplify and integrate the process of change management, but also extends the life cycle of data center operation.

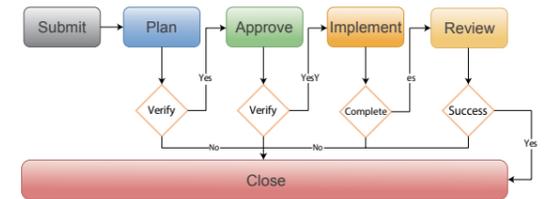


FIGURE 6. The Process of Change Management



Asset Inspection Module

The Asset Inspection Module of the InfraSuite Manager is used with a user-friendly mobile app which makes it smarter and more efficient for the inspector to complete his/her inspection process. Customizable templates can be designed for different types of assets. Users can also upload photos of the inspected assets to InfraSuite Manager. Unique QR codes of each asset can be generated by the system, making the tasks more intuitive.

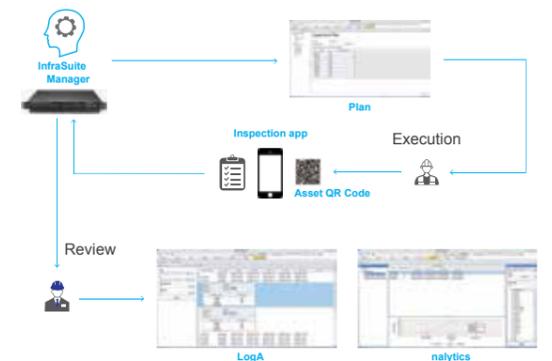


FIGURE 7. The flow of Inspection Execution and Review

System Requirements

	InfraSuite Manager (Server)	InfraSuite Manager (Windows Application UI)	InfraSuite Manager (Web Monitor UI)
Hardware	CPU: > 2GHz Memory: ≥ 8G Free HD Space: 500G mirrored	CPU: > 2GHz Memory: ≥ 4G	CPU: > 2GHz Memory: ≥ 4G
Software	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Recommended Web Browser: Microsoft Internet Explorer v11, Google Chrome v30, Mozilla Firefox v23 and Safari v5.

Delta InfraSuite Management System

InfraSuite Device Master

InfraSuite Device Master provides a rich set of capabilities that simplify and automate critical device monitoring. It allows users to observe the status of all devices, query event logs or history data, and assists users in taking appropriate action. With cost effective deployment, this software solution is scalable to match your business growth.

Benefits of InfraSuite Device Master

Free to Download

InfraSuite Device Master is free to download with 5 nodes by default for monitoring your devices. Various infrastructure facilities such as power and cooling in a data center can be monitored.

Real-Time Monitoring

Users can gather the latest status of critical facilities in a data center through the system screens of InfraSuite Device Master. InfraSuite Device Master also lets you view all of a site's device information, query history and events at the same time, even for multiple sites in different countries.

Easy to Deploy

The download file is ready on the Delta Software website. InfraSuite Device Master is easy to install on your server or PC, with software designed for quick installation and implementation.

Migration to InfraSuite Manager (DCIM)

If you are not only looking for device monitoring but also a complete DCIM solution, InfraSuite Device Master is the easiest way of migrating to InfraSuite Manager, which is Delta fully featured DCIM software solution.

Product Features

Navigational Graphics

Navigational graphics of the InfraSuite Device Master are customizable. Users can design a floor layout using the provided components.

Multiple Protocol Support

InfraSuite Device Master supports multiple device protocols, such as Modbus, SNMP and OPC.

Proactive Notification

Proactive notifications provide automated, personalized email, short messages, and audio to users.

User Account Management

Users can be classified into groups based on privilege levels. The job scope of each privilege level is defined by administrators. The jobs include the level of visible access to layout plans, device control and system operation.

Event Management

InfraSuite Device Master has categorized event levels with 16 levels to help users take appropriate action accordingly. Besides, events can be queried by time, type, level and devices. InfraSuite Device Master records the system, operator and device events in its database where the user can review the events' status.

Data Storage and Backup

InfraSuite Device Master stores all history events and data into its database. Users may use this data for analysis. In addition, the database can be backed up automatically base on user preference.



FIGURE 2. Navigational Graphics

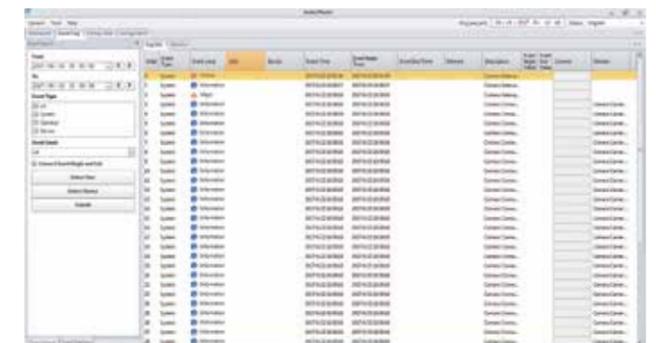


FIGURE 3. Event Log List

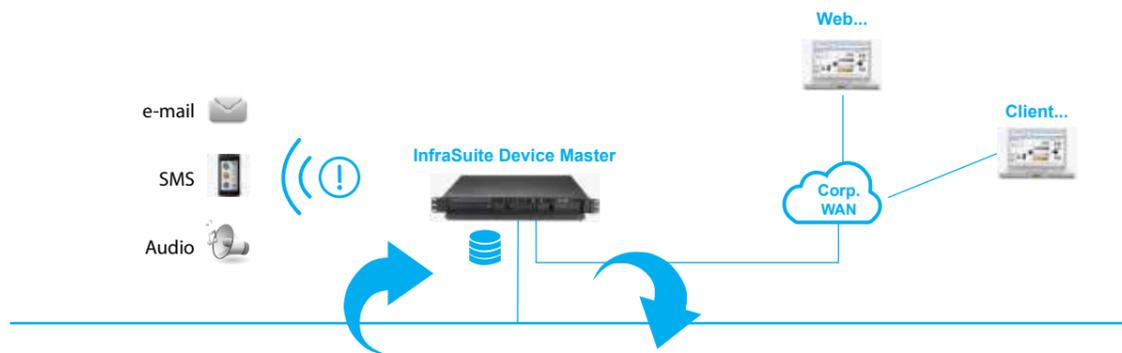


FIGURE 1. Delta InfraSuite Device Master Monitoring Application

Free Download To try the lite version of DCIM (InfraSuite Device Master), please go to:
<http://www.deltapowersolutions.com/en/mcis/data-center-infrasuite-device-master.php>

System Requirements

	InfraSuite Device Master (Server)	InfraSuite Device Master (Windows Application UI)	InfraSuite Device Master (Web Monitor UI)
Hardware	CPU: > 2GHz Memory: ≥ 4G Free HD Space: ≥ 50 G	CPU: > 2GHz Memory: ≥ 4G	CPU: > 2GHz Memory: ≥ 4G
Software	Support OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Supported OS: Windows 7, 8, 10, Windows Server 2008, 2012, 2016	Recommended Browser: Microsoft Internet Explorer v11, Google Chrome v30, Mozilla Firefox v23 and Safari v5.

Delta InfraSuite Management System

EnviroStation

Delta's Environmental Management System (EMS) monitors the environment and conditions in the data center, including temperature, humidity, water leakage, alarms for fire, smoke, and unauthorized entry.

The EMS offers IT managers an integrated platform for more convenient monitoring of today's data center.

EnviroStation integrates the monitoring of the data center's environment and other conditions, and sends the data to a central manager via network. User-defined alarms ensure the data center's security.



Easy to manage

- Assess and collect key data center information for enhanced management
- Real-time notification providing faster management response and more effective operations
- Setting manager password for higher security
- SNMP allowing easy integration with any enterprise management system

Convenience

- Monitoring via internet browser
- InfraSuite Manager remote monitoring software providing prompt handling of any data center situation
- Graphical interface and historical data records for more effective management
- Real-time alarm notifications shortening management response time

Flexibility

- Supports SNMP communication protocol
- Setting each alarm value based on actual requirements

Technical Specifications

Model	EMS2000	
Input	Power	100~240 Vac, 50/60 Hz
	Digital Input	Wet Contact Signal • Alarm Voltage 5~24 Vdc, 1-9 mA Dry Contact Signal • Normal: Off (open circuit) • Alarm: On (short circuit)
	Analog Input	Voltage: 0~10Vdc Current: 4~20 mA
	RTD	Range: 0~50°C Accuracy: ± 1°C with 3-wire PT100
Resistance Temperature Detection (x1) Leakage		Support 2-wire or 3-wire resistance
		Detect Voltage < 1V (alarm signal with S-1FP leak sensor)
Output	Sensor HUB	For connection with sensor devices (such as smoke detectors, fire detectors, or door sensors, etc) and support: + 12V, 0.8A (max) + 24V, 1.0A (max) One port limit 0.6A
	Delta Bus Relay Output	+ 12V, 0.8A (max) 26 Vdc (max), 0.8A (max)
Alert	Warning Light (X1)	Included in the package and can connect to EMS2000 via a Sensor Hub converter (through Port 1 or Port 2) to alert for abnormal conditions.
Network Connection	RJ45 (X1)	10/100 Base-T
	RS485 (X2)	Standard ModBus
	Console (X1)	Connect to PC via RJ-45 to DB9 cable (cable is included in the package) A configuration port is available for the console mode.
Environment	Operating Temperature	0 ~ 45°C
	Storage Temperature	-20 ~ 60°C
	Operating Humidity	0~ 90% RH (non-condensing)
Dimensions	Product (W x D x H)	440 x 157 x 44 mm
	Package (W x D x H)	510 x 410 x 150 mm
Weight	Product	2.4 kg
	Package	5 kg

These specifications are subject to change without notice.

One Tool. Complexity Mastered.

Delta InfraSuite Manager. Integrated Efficiency.



InfraSuite Manager - Data Center Infrastructure Management (DCIM)

Have the entire data center at your fingertips!



Delta InfraSuite Management System

EnviroProbe

EnviroProbe monitors temperature, humidity in a single cabinet or area and transmits signals from environment sensor devices in the data center (e.g. door sensors, smoke detectors, fire detectors, water-leakage detectors etc.) to management via network. EnviroProbe also controls its connected devices when equipped with digital and analog outputs, keeping the IT manager promptly informed of all environmental changes by giving alarms, controlling the activation and deactivation of an external device (e.g. a magnetic lock), or by giving a sound alert using its own built-in buzzer upon detection of water leakage.

Easy to manage

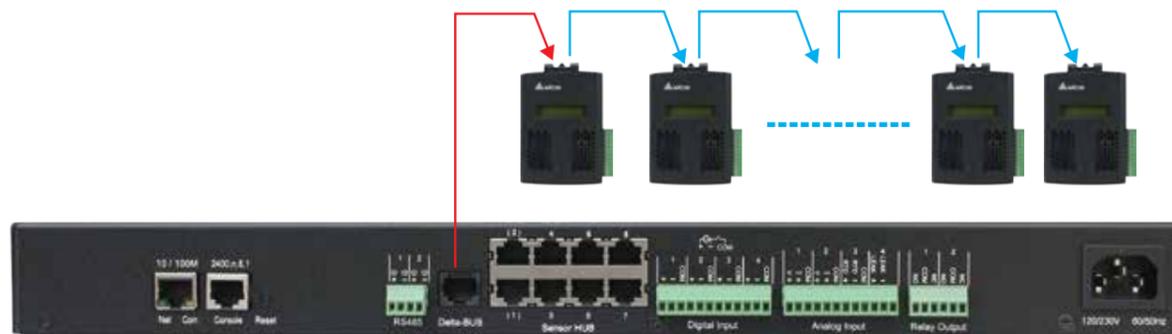
- Monitoring temperature, humidity of the environment
- Backlight LCD display
- Digital/analog inputs and outputs

Convenience

- Work with EnviroStation(EMS2000) to monitor via internet browser
- InfraSuite Manager software for remote monitoring and recording

Flexibility

- Work with EnviroStation(EMS2000) to support SNMP communication protocol



▲ Connecting EnviroProbes with EnviroStation can expand the scope of the monitored area.

Technical Specifications

Model	EMS1000	EMS1100	EMS1200
Input Voltage	EMS2000 Delta-BUS or SNMP Card: 12 Vdc (pin 1 & 4) PDU SNMP card: 5 Vdc (Pin 2 & 4)		
Purpose	To collect data from connected devices (temperature & humidity)	To control connected devices	To collect data from and control connected devices
Input/Output Contacts	4 dry/wet contact inputs	4 digital outputs	2 analog inputs, 1 analog output, 1 water-leakage detection (built-in buzzer)
	Connect to EnviroStation (EMS2000) or SNMP IPv6 card		Connect to EnviroStation (EMS2000)
Input	Wet Contacts: 5~24Vdc, 1~8mA; Dry Contacts: Open/Short Status	N/A	Voltage: 0~10Vdc (12bit) Current: 0~20mA (12bit)
Output	N/A	Contact voltage/Contact current/Contact tolerance 60Vdc/1A/60W; 30Vac/2.08A/62.5VA	Voltage: 0~10Vdc (12bit) Current: 4~20mA (12bit)
Cascade number to EMS2000	Up to 16 units	Up to 4 units	Up to 5 units
Dimensions (WxDxH)	Product: 66 x 33 x 103 mm Package: 91 x 42 x 133 mm		
Weight	Net Weight: 120g Gross Weight: 140g	130g 150g	
Environment	Temperature	Operation: 0 ~ 60°C	
		Storage: -30 ~ 80°C	Storage: 0 ~ 60°C
		Accuracy: ± 0.4°C & 0 ~ 60°C	N/A
Humidity	Operation: 0 ~ 90% RH (no condensation)		
	Storage: 0 ~ 100% RH (no condensation)		
	Accuracy: ± 3°C & 0 ~ 80°C	N/A	
Altitude	0 ~ 10,000 feet		
Conformance	CE		
	EN55022 (CISPR 22) Class B		
	EN55024 (Level 3 @Air 8 KV/contact 4 KV)		

These specifications are subject to change without notice.

Delta InfraSuite Precision Cooling

Modern data centers have implemented a high-density model, mainly based on blade servers, to increase space utilization and accommodate the rapid expansion of new IT equipment. This model requires a higher power supply density and creates bigger heat dissipation problems, where increased power consumption for air conditioning can account for 45% of total data center electricity expenses. With this in mind, heat dissipation and electricity expenses are important indices against which operational expenditures of the data center can be measured.

As a leading global manufacturer of fans and a specialist in power management, Delta Electronics was perfectly positioned to develop Delta InfraSuite Precision Cooling solutions in order to provide practical, optimized, innovative methods for data center cooling. Delta InfraSuite Precision Cooling solutions employ either chilled water or direct expansion types to remove the heat produced by the hardware within the data center. Delta provides various cooling solutions, including RowCool chilled water type, RowCool direct expansion type and RoomCool series direct expansion type, to fulfill customers' diversified requirement. Applicable sectors cover cloud, colocation, telecommunication, semiconductor, precision manufacturing, enterprises, education, etc.

Various design options can also be implemented for the optimal solutions. Delta's comprehensive offerings include hot aisle or cold aisle containment, chilled water temperature setting, free cooling technology, and more. Those flexible cooling configurations and designs play an important role for data centers to achieve target PUE for more energy savings.

Using too much energy to keep your data center cool?



Delta InfraSuite Precision Cooling

The most reliable and efficient cooling solutions

Power consumption for air conditioning can account for 45% of a data center's total electricity expenses. Delta's InfraSuite Precision Cooling is designed with smart cooling technology to effectively solve thermal issues and reduce the electricity required for cooling. It provides the best cooling solution to meet 24 hours × 365 days of continuous operation requirements for a constant temperature and humidity in a critical equipment environment, such as for:

- Data center from small, medium to enterprise
- Cloud data center
- Colocation data center
- Prefabricated data center
- Medical equipment room
- Research laboratory
- Precision manufacturing equipment room



Delta InfraSuite Precision Cooling

RowCool Series 29/43/70/95kW, Chilled Water

Delta's RowCool CW offers outstanding performance in high temperature chilled water applications via the optimized design of its heat exchanger. With industry-leading high cooling capabilities, the RowCool CW increases the overall cooling efficiency of data center precision cooling systems. The cooling capacity of a single unit can reach up to 260kW. The RowCool CW provides the best cooling solutions for data centers over hundreds of kW, focusing on both high efficiency and high density.

High Efficiency

- Optimized for high temperature chilled water applications, the heat exchanger design increases the overall efficiency of precision cooling systems.
- The Electronically Commuted (EC) Fans design provides variable fan speed control for optimal speeds in real-time according to load changes, avoiding unnecessary power waste.
- Closely couples to IT heat loads and quickly adapts to load changes for direct and effective heat removal.

High Availability

- Supports dual power feed input and is suitable for any tier level of power reliability architectures.
- Thanks to the inherent redundancy design of the fan system, other fans automatically increase fan speeds to make up for the required airflow if one of the fans malfunctions.
- 1+1 redundant design of the power modules increases reliability (applicable to some models).
- Hot-swappable power module and fan design allows replacement without the need of a power shut down while malfunctioning.
- The smart group control function is equipped with rotation, back up, competition free, and soft start functions.
- Comprehensive operation monitoring such as chilled water flow and leakage detection allows full control of machine operations and the ability to take necessary troubleshooting measures in real-time.

High Flexibility

- Top or bottom piping and wiring options are available to satisfy the pipeline design needs for different data center requirements.
- Multiple communication interfaces satisfy the surveillance and communication needs of a variety of data centers.
- High efficiency filter (MERV 8) or washable filters (MERV 1) are available for users to choose according to their needs.
- Equipped with casters for easy movement and positioning during installation without the need for additional handling tools.
- 2.4-meter-high models using the 52U rack are also available to customers. (For special height requirements, please contact your local Delta office)



Technical Specifications

Model		CW 29 kW	CW 43 kW
		HCH1850	HCH1870
Power	Input	1-phase 220-240V, 50/60 Hz	
Capacity	Total Capacity ⁽¹⁾	30.8 kW	43.4 kW
	Sensible Capacity ⁽¹⁾	30.2 kW	43 kW
	Total Capacity ⁽²⁾	37.1 kW	50.4 kW
	Sensible Capacity ⁽²⁾	37.1 kW	50.4 kW
	Total Capacity ⁽³⁾	28.8 kW	36 kW
	Sensible Capacity ⁽³⁾	28.8 kW	36 kW
Fan	Type	EC	
Piping Connection		Top / Bottom	
Conformance		CE	
Communication		RS-485 x 1, Input dry contact x 2, Output dry contact x 2, SNMP slot x 1	
Dimension	Width	300 mm	300 mm
	Depth	1090 mm	1090 mm
	Height	2000 mm	2000 mm
Weight		185 kg	187 kg

*1. Rating capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 7°C.

*2. Maximum capacity is measured at 48.9°C DB / 23.9°C WB / Inlet water temperature 7°C.

*3. High temperature water capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 12°C / Outlet water temperature 20°C.



Model		CW 70kW	CW 70kW	CW 95kW	CW 95kW
		HCH1CB0	HCH1CB0 Humidity Control	HCH1CD0	HCH1CD0 Humidity Control
Power	Input	3-phase 380-415V, 50/60 Hz			
Capacity	Total Capacity ⁽¹⁾	69.3 kW	69.3 kW	92.6 kW	92.6 kW
	Sensible Capacity ⁽¹⁾	69.3 kW	69.3 kW	91.6 kW	91.6 kW
	Total Capacity ⁽²⁾	83.1 kW	83.1 kW	110.7 kW	110.7 kW
	Sensible Capacity ⁽²⁾	83.1 kW	83.1 kW	110.7 kW	110.7 kW
	Total Capacity ⁽³⁾	57.4 kW	57.4 kW	79.4 kW	79.4 kW
	Sensible Capacity ⁽³⁾	57.3 kW	57.3 kW	79.4 kW	79.4 kW
Fan	Type	EC			
Heater	Type	None	Finned tube reheater	None	Finned tube reheater
Humidifier	Type	None	Electrode	None	Electrode
Piping Connection		Top / Bottom			
Conformance		CE			
Communication		RS-485 x 1, Input dry contact x 2, Output dry contact x 2, SNMP slot x 1			
Dimension	Width	600 mm	600 mm	600 mm	600 mm
	Depth	1090 mm	1090 mm	1090 mm*4	1090 mm*4
	Height	2000 mm	2000 mm	2000 mm	2000 mm
Weight		368 kg	375 kg	415 kg	422 kg

*1. Rating capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 7°C.

*2. Maximum capacity is measured at 48.9°C DB / 23.9°C WB / Inlet water temperature 7°C.

*3. High temperature water capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 12°C / Outlet water temperature 20°C.

*4. Depth is 1200 mm for top piping model.

All specifications are subject to change without prior notice.

Delta InfraSuite Precision Cooling

RowCool Series 35kW, Direct Expansion

Delta's RowCool DX series uses high-efficiency DC inverter compressors and electronically Commuted (EC) Fans. Using Delta's best fuzzy control mode, the RowCool DX series is the highly efficient, outstanding direct expansion (DX) type cooling product. Improving the high efficiency and power density of medium or small sized data center, and offering both convenience and easy maintenance, Delta's RowCool DX is the best choice for optimizing the total cost of ownership (TCO).

High Efficiency

- Both compressor and fans use DC brushless motors that provide high efficiency and great power-savings.
- The inverter-driven design provides variable fan speed control for optimal speed in real-time according to load changes, avoiding power waste.
- Condenser fan operation is more stable and energy-saving via fuzzy control compared to traditional control systems.
- Closely couples to IT heat loads and quickly adapts to load changes for direct and effective heat removal.

High Availability

- Supports dual power feed input and is suitable for any tier level of power reliability architectures.
- Thanks to the inherent redundancy design of the fan system, other fans automatically increase fan speeds to make up for the required airflow if one of the fans malfunctions.
- Using the optional condenser models for low temperature, the RowCool DX series can operate in environments below -40°C.
- The smart group control function is equipped with rotation, back up, competition free, and soft start functions.
- Complete operation monitoring such as air supply and return airflow temperature allows full control of operations and the ability to take necessary troubleshooting measures in real-time.

High Flexibility

- Top or bottom piping and wiring options are available to satisfy the design requirements of different data centers.
- Various communication interfaces satisfy the surveillance and communication needs of various data centers.
- High efficiency filter (MERV 8) or washable (MERV 1) filters are available for users to choose according to their needs.
- Equipped with casters for convenient movement and positioning during installation without the need for additional handling tools.
- Condensers equipped with AC fans are also available for budget customers.



Technical Specifications

Model		DXA 35kW HCH6C60	DXA 35kW HCH6C60 Humidity Control
Power	Input	3-phase 380-415V, 50/60 Hz	
Capacity *	Total capacity	35.6 kW	35.6 kW
	Sensible capacity	34.5 kW	34.5 kW
Fan	Type	EC	
Reheater	Type	None	Finned tube reheater
Humidifier	Type	None	Electrode
Connection		Top / Bottom	
Conformance		CE	
Communication		RS-485 x 1, Input dry contact x 1, Output dry contact x 1, SNMP x 1	
Dimension	Width	600 mm	600 mm
	Depth	1090 mm	1090 mm
	Height	2000 mm	2000 mm
Weight		340 kg	345 kg

* Capacity is measured at 24°C return air temperature, 50% relative humidity and 45°C condensing temperature.

Outdoor Unit

Model		HFC6B40-13S	HFC6B50-15S	HFC6B70-17D
Power	Input	1-phase 220-230V, 50Hz		
Fan	Type	AC		
Dimension	Width	1515 mm	1715 mm	1915 mm
	Depth	1100 mm	1100 mm	1100 mm
	Height	1090 mm	1090 mm	1090 mm
Weight		99 kg	107 kg	142 kg

Model		HCC6C50-13S	HCC6C50-15S	HCC6C70-17D
Power	Input	3-phase 380-415V, 50/60Hz		
Fan	Type	EC		
Dimension	Width	1515 mm	1715 mm	1915 mm
	Depth	1100 mm	1100 mm	1100 mm
	Height	1090 mm	1090 mm	1090 mm
Weight		102 kg	110 kg	148 kg

All specifications are subject to change without prior notice.

Delta InfraSuite Precision Cooling

RoomCool F Series

The Delta RoomCool F series, using electronically commuted (EC) fans, are room-based precision cooling of modern data center developed specifically for medium or small sized data centers. The Delta RoomCool F series' design achieves a high Annual Energy Efficiency Ratio (AEER), as well as high reliability and flexibility. As most data centers use traditional air supplies under a raised floor, the new approach of the F series offers both traditional and modern options. The F series is the best choice for medium or small sized data centers, for both building new data center facilities and retrofits.

High Efficiency

- Fans can be configured under a raised floor to reduce fan power consumption by about 20%.
- All series use EC fans with variable fan speeds set according to static pressure of data centers' requirement, optimizing the operation and performance of the precision cooling system.
- Smart fuzzy control of condenser fan operation is more stable and energy saving compared to traditional controls.
- Highly efficient scroll compressor with various energy-saving optimization designs provides traditional data centers with outstanding AEER performance.

High Availability

- Compact design with full front access maintenance minimizes footprint and maintenance space and creates maximum available IT space in the same data center area.
- Dual compressor system models offer internal redundancy function for continuous system operation when other systems malfunction.
- Color graphical touch panel offers user-friendly, interactive operation.
- Using the optional condenser models for low temperature allows operations in environments below -40°C.
- Smart group control offers rotation, back up, competition free, and soft start functions.
- Used with Delta ADU provides sufficient cooling capacity for some high power density racks.

High Flexibility

- Depending on raised floor height or customer preference, fan installation can be below the raised floor or inside the RoomCool machine. Installing fans directly does not require additional accessories, settings, or tools. Fan installation under the floor reduces power consumption and noise.
- Full front access maintenance does not require rear maintenance space. Installation against a wall to fit with the layout design of the data center is possible for maximum flexibility.
- Multiple communication interfaces satisfy the surveillance and communication needs for a variety of data centers.
- Condensers equipped with AC fans are also available for budget customers.



Technical Specifications

Model	HCD6640-20	HCD6660-30	HCD6660A-35	HCD6670A-40	HCD6680A-50	HCD66A0A-60	HCD66B0A-70
Air flow	Down flow						
Power	Input 3-phase 380-415V, 50 Hz						
Capacity*	Total capacity	17.8 kW	25.7 kW	34.1 kW	36.8 kW	48.5 kW	65.8 kW
	Sensible capacity	16.0 kW	23.1 kW	28.3 kW	30.5 kW	43.7 kW	59.2 kW
Compressor	Type	Scroll compressor					
	Refrigerant	R410A					
Fan	Type	EC					
Heater	Type	Electronical heater					
Humidifier	Type	Electrode humidifier					
Filter	Type	MERV 8					
Conformance	CE						
Display	Touch panel						
Communication	RS-485 x 1, Input dry contact x 2, Output dry contact x 6, SNMP x 1						
Dimensions	Width	852 mm	852 mm	852 mm	852 mm	1702 mm	2052 mm
	Depth	850 mm	850 mm	850 mm	850 mm	850 mm	850 mm
	Height	1970 mm	1970 mm	1970 mm	1970 mm	1970 mm	1970 mm
Weight	250 kg		288 kg	311 kg	314 kg	520 kg	595 kg

* Cooling capacity is measured at 24°C return air temperature, 50% relative humidity and 45°C condensing temperature.

Outdoor Unit

Model	HFC6B40-09S	HFC6B40-11S	HFC6B40-13S	HFC6B50-15S	HFC6B70-17D	HFC6B70-20D
Power	Input 1-phase 220-230V, 50Hz					
Fan	Type AC					
Dimension	Width	1115 mm	1315 mm	1515 mm	1715 mm	2215 mm
	Depth	1100 mm				
	Height	1090 mm				
Weight	79 kg	89 kg	99 kg	107 kg	142 kg	154 kg

Model	HCC6C40-09S	HCC6C40-11S	HCC6C50-13S	HCC6C50-15S	HCC6C70-17D	HCC6C70-20D
Power	Input 3N~, 380-415V, 50/60Hz					
Fan	Type EC					
Dimension	Width	1115 mm	1315 mm	1515 mm	1715 mm	2215 mm
	Depth	1100 mm				
	Height	1090 mm				
Weight	82 kg	92 kg	102 kg	110 kg	148 kg	160 kg

All specifications are subject to change without prior notice.



User-friendly color touch screen display



Energy-saving EC Fans



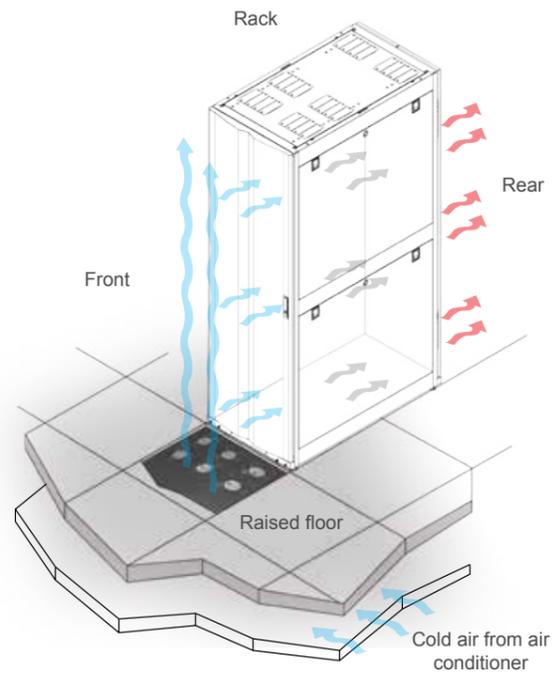
Fans under raised floor provide same air flow with 20% less power consumption

Delta InfraSuite Precision Cooling

Air Distribution Unit

For data centers with raised floors, the space beneath the floors are usually used as the cold aisle to deliver cold air to the IT racks. In data centers with this type of architecture, the amount of cold air that can be received by each IT rack depends on the static pressure of the cold aisle, the opening areas on floors as well as the suction capability of the racks. If any of these three criteria are insufficient, the rack will face the problem of insufficient supply of cold air and result in overheating.

The Delta ADU provides data centers with a simple solution for hot spots at the end of an aisle or for overheated high power density racks. Delta's ADU installs under the original openings of a raised floor where it detects the temperature inside a target rack or hot spot. The ADU automatically adjusts the rotation speed of its electronically commuted (EC) fan to provide the cool air needed by the target rack or hot spots.



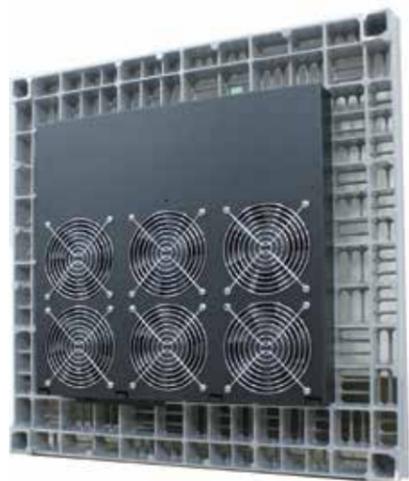
Technical Specifications

Model	HC5990	
Power	Rated voltage	1-phase 100-240 Vac
Fan	Type	EC
	Communication	Dry contact x 4
Conformance	CE, EN55022 Class A	
Dimensions (W x H x D)	430 x 400 x 54 mm	
Weight	5.6 kg	

All specifications are subject to change without prior notice.



Easily installed beneath raised floor



Features and Benefits

- Maximum airflow above 1000 CFM.
- Inherent redundancy design if a fan malfunctions, other fans automatically increase in speed to make up the required airflow.
- The EC fan uses internal temperature data feedback of the target rack to automatically adjust fan speed and achieve the required rack temperature.
- Installs directly under raised floors with common openings - no need for special raised floors.
- Four dry contact outputs and one input for administrators to monitor and control.



Trust Is Earned With Competence and Capability

Smarter modular data center solutions -
Delta InfraSuite is the choice of world top customers



Brazil

The largest private sector bank in Latin America chose Delta to back up its branch office automation.



Peru

Delta helped a world wide satellite operator to maintain datacenter operation in Peru.



US

Delta's modular UPS is the power behind the advanced "grab and go" shopping technology.



South Africa

A public research university chose Delta InfraSuite solution to build up a reliable modular data center.



Germany

Delta InfraSuite ensures the continuous operation for No1 online shop.



Russia

Delta provided UPS & InfraSuite solutions for

- Miran company's data center in St. Petersburg.
- IMAQLIQ, a colocation services provider's Uptime Institute Tier III data center.
- Five football stadiums of the 2018 FIFA World Cup Russia™.



Spain

Atos is a global leader in digital transformation selected Delta's modular UPS solutions to protect their MW data center.



France

Delta provided UPS solutions to the world's largest chain of fast food restaurants in France to protect its POS and server equipment.



China

Delta provided UPS & InfraSuite solutions for

- A world-class theme park in Shanghai.
- World's largest Chinese website service company.
- Shanghai Mobile Whirlpool IDC data center.
- China Mobile/ China Telecom/ China Unicom.
- ShanXi Broadcasting & TV Tower.



Korea

The largest airport in South Korea chose Delta modular UPS to safeguard its immigration office data centers.



Taiwan

The world leading semiconductor company and one IC design company adopted Delta InfraSuite for their high power density data centers.

- Delta InfraSuite solutions helped Nation Chung Cheng University to build green data centers.



Thailand

A global leading ICT service provider chose Delta DCIM solution for a financial credit rating company.



India

The large government development bank selected Delta UPS to provide highly reliable power protection for the data center.



APAC

Delta's power container solution protected MW colocation data centers in Asia Pacific.



Europe

Czech Republic

Delta Energy Systems
(Czech Republic), spol.s r.o.
Perucka 2482/7, 120 00 Praha 2,
Czech Republic
T +420 272 019 330
E ups.czech.republic@deltaww.com

Finland

Delta Solutions (Finland) Oy
P.O. Box 63, Juvan teollisuuskatu 15, FIN-
02921 Espoo, Finland
T +358 9 84966 0
E ups.finland@deltaww.com

France

Delta Electronics (France) S.A.
ZI du bois Chaland 2, 15 rue des Pyrénées,
Lisses, 91056 Evry Cedex, France
T +33 1 69 77 82 60
E ups.france@deltaww.com

Germany

Delta Energy Systems (Germany) GmbH
Coesterweg 45, 59494 Soest, Germany
T +49 2921 987 0
E ups.germany@deltaww.com

The Netherlands - EMEA Headquarters

Delta Electronics (Netherlands) BV
Zandsteen 15, 2132MZ Hoofddorp,
The Netherlands
T +31 (0) 20 800 39 00
E ups.netherlands@deltaww.com

Poland

Delta Electronics (Poland) Sp. z.o.o.
23 Poleczki Str., 02-822 Warszawa,
Poland
T +48 22 335 26 00
E ups.poland@deltaww.com

Russia

Delta Energy Systems LLC
Vereyskaya Plaza II, office 112, Vereyskaya
str.17, 121357 Moscow, Russia
T +7 495 644 3240
E ups.russia@deltaww.com

Slovak Republic

Delta Electronics (Slovakia) s.r.o.
Botanicka 25/A, SK - 841 04 Bratislava,
Slovakia
T +421 2 6541 1258
E ups.slovakia@deltaww.com

Switzerland

Delta Electronics (Switzerland) AG
Freiburgstrasse 251, 3018 Bern-Bümpliz,
Switzerland
T +41 31 998 53 11
E ups.switzerland@deltaww.com

Spain

Delta Electronics Solutions (Spain) SLU.
Ctra. de Villaverde a Vallecas, 265 1º Dcha Ed.
Hormigueras, 28031 - Madrid, Spain
T +34 91223 7420
E ups.spain@deltaww.com

Turkey

Delta Greentech Electronic San. Ltd.
Serifali Mevkii Barbaros Bulvari Soylesi Sok No
19 Y.Dudullu-Umraniye/Istanbul, Turkey
T +90 216 499 9910
E ups.turkey@deltaww.com

United Kingdom

Delta Electronics Europe Ltd.
1 Redwood Court, Peel Park, Campus, East
Kilbride, G74 5PF, United Kingdom
T +44 1355 588 888
E ups.united.kingdom@deltaww.com

Middle-East & Africa

South Africa

Delta Energy Systems MEA (Switzerland) AG
South Africa Representative Office
Unit 305B, Lougardia Building, Cnr
Embankment and Hendrik Verwoerd Drive,
Centurion, 0157, South Africa
T +27 12 663 2714
E ups.south.africa@deltaww.com

United Arab Emirates

Delta Energy Systems (Switzerland) AG
Dubai Representative Office
P.O. Box 185668
Gate 7, 3rd Floor, Hamarain Centre, Dubai
T +971 425 99 55 3
E info.middle-east@deltaww.com

Americas

Brazil

Delta Greentech (Brasil) S/A
Rua Itapeva, Nº 26 - 3º andar
01332 000 - São Paulo - SP
T +55 11 3530 8658
E ups.brazil@deltaww.com

The United States

Delta Electronics (Americas) Ltd.
46101 Fremont Blvd.
Fremont, CA 94538
T +1 510 344 2157
E ups.na@deltaww.com

Asia Pacific

Australia

Delta Energy Systems Australia Pty Ltd.
Unit 20-21, 45 Normanby Road, Notting
Hill VIC 3168, Australia
T +61 3 9543 3720
E ups.australia@deltaww.com

Sydney office:
B46/24-32 Lexington Drive, Bella Vista NSW
2153, Australia

China

Delta GreenTech (China) Co., Ltd.
238 Minxia Road, Pudong, Shanghai, 201209
P.R.C
T +86 21 5863 5678 / +86 21 5863 9595
E ups.china@deltaww.com

India

Delta Power Solutions (India) Pvt. Ltd.
Plot No. 43, Sector-35, HSIIDC,
Gurgaon-122001, Haryana, India
T +91 124 4874 900
E ups.india@deltaww.com

Indonesia

Wisma Aldiron 1st Floor, Suite 140, Jl. Jend.
Gatot Subroto Kav. 72, Jakarta 12780,
Indonesia
E ups.indonesia@deltaww.com

South Korea

Delta Electronics (Korea), Inc.
1511, Byucksan Digital Valley 6-cha,
Gasandong,
Geumcheon-gu, Seoul, Korea 153-704
T +82 2 515 5303
E ups.south.korea@deltaww.com

Malaysia

C-05-08, LEVEL 05, BLOCK C, SKYPARK
One City, Jalan USJ 25/1
47650 Subang Jaya
Selangor Darul Ehsan, Malaysia
E ups.malaysia@deltaww.com

Philippines

Unit 1001 Richmond Plaza, San Miguel Ave.,
Ortigas Centre, Pasig City, Philippines
E ups.philippines@deltaww.com
Singapore

Singapore

Delta Energy Systems (Singapore) Pte Ltd.
4 Kaki Bukit Ave 1, #05-04, Singapore
417939
T +65 6747 5155
E ups.singapore@deltaww.com

Taiwan

Delta Electronics Inc.
39 Section 2, Huandong Road,
Shanhua Township
Tainan County 74144, Taiwan
T +886 6 505 6565
E ups.taiwan@deltaww.com

Thailand

Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9, Moo 4, E.P.Z., Bangpoo
Industrial Estate, Tambon Prakarn,
Amphur Muang-samutprakarn,
Samutprakarn Province 10280, Thailand
T +662 709-2800
E ups.thailand@deltaww.com

Vietnam

3rd floor, RIC Building, 51 Hoang Viet, Tan
Binh, Ho Chi Minh City Vietnam
E ups.vietnam@deltaww.com