



Delta InfraSuite

Data Center Infrastructure Solutions

About Delta Group

Leading expert in power management and thermal management solutions

Delta, founded in 1971, is a global provider of power and thermal management solutions. Its mission statement, "To provide innovative, clean and energy-efficient solutions for a better tomorrow," focuses on addressing key environmental issues such as global climate change. As an energy-saving solutions provider with core competencies in power electronics and automation, Delta's business categories include Power Electronics, Automation, and Infrastructure.

Delta offers some of the most energy efficient power products in the industry, including switching power supplies with efficiency over 90%, telecom power with up to 98%, and PV inverters with up to 99.2% efficiency. We have also developed the world's first server power supply certified as 80 Plus Titanium.



Worldwide No. 1 supplier of merchant power supplies

The Total Merchant Power Supply Market 2021 Revenue		
Ranking	Company Name	Sales (M/USD)
1	Delta Electronics	\$6,600
2	Schneider Electric	\$3,300-3,700
3	Sungrow Power Supply	\$3,400-3,550

Source: Micro-Tech Consultants, 2021

CSR Honors and Awards

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA

2011 – 2021
DJSI - World Index
2018-2021 Industry Leader



2021
Climate Change
Leadership Level



2021
Water Security
Leadership Level

Sustainability Award
Gold Class 2021
S&P Global

2021
Sustainability Award
Gold Class

Global Footprint

World's No. 1 in Switching Power Supplies, DC Brushless Fans and Telecom Power Systems.

158 sales offices and **48** manufacturing facilities worldwide.

8.6% of annual sales revenues invested in R&D with over **9,000** engineers in **72** R&D centers worldwide.

Awarded **12,000** patents and received internationally recognized design awards including iF, Reddot, and the Taiwan Excellence awards.



	Asia-Pacific	Americas	EMEA	Total
Sales Offices	100	25	33	158
Plant Sites	40	4	4	48
R&D Centers	48	9	15	72

Data Center Solutions

Delta's InfraSuite offers a comprehensive, modular and highly integrated portfolio to support the creation of high-performance data centers. As a global leader in thermal and power management solutions, Delta has further strengthened its leading position in data center infrastructure with a complete offering of AC or DC power, cooling systems and monitoring platforms from micro and modular to containerized solutions.

Our Services and Capabilities

- Provide total data center life cycle services, including consulting, design, simulation, implementation and after service.
- Design and build data centers per customer requirements using optimal solutions.
- Offer comprehensive power supply, power distribution, cooling system, modular racks and DCIM solutions for implementation anywhere.

Diverse Data Center Product Offerings



Power Management



Precision Cooling



Management System



Rack & Accessories

Delta Supports You All the Way for Data Center Development



Proposal



Planning & Design



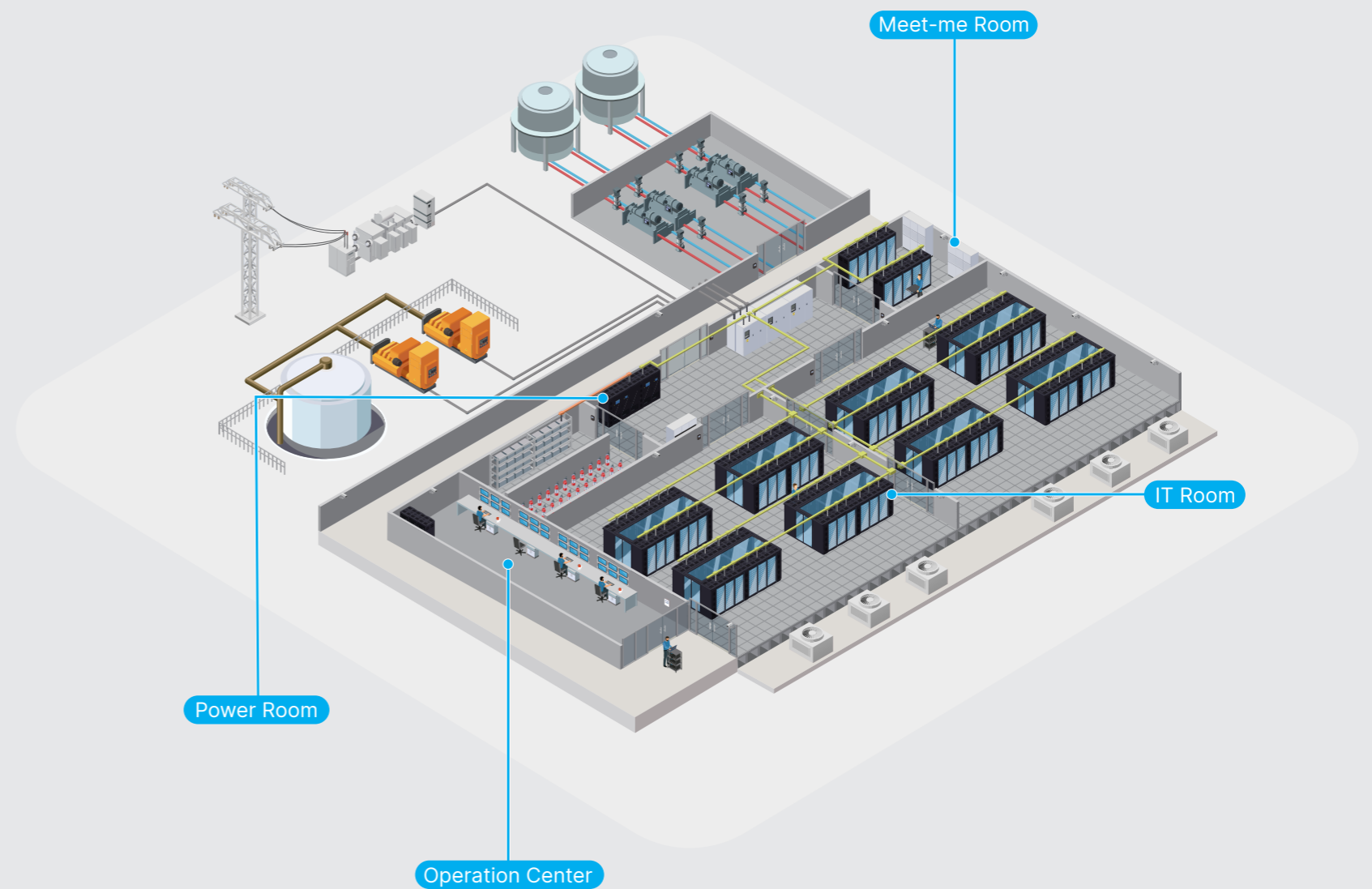
Manufacturing & Validation



Site I&C & Management



After Service



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 four UPS product families - Agilon, Amplon, Ultron and Modulon.

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
- Support for seamless operations at a low level of total cost of ownership (TCO)

Delta provides a full range of UPSs to equip data centers from small to large



Product Matrix

Series	Topology	Configuration	Form	Battery	Remarks
Agilon Family Under 1.5 kVA, Single-Phase UPS					
VX Series 0.6-1.5 kVA	Line-interactive	1:1	Tower	Internal	
Amplon Family 1 kVA or higher, Single-Phase UPS					
MX Series 1.1-3 kVA	Line-interactive	1:1	Rack mountable Tower	Internal	
N Series 1-3 kVA	On-line	1:1	Tower	Internal External	
N Series 6-10 kVA	On-line	1:1	Tower	External	
R Series 1-3 kVA	On-line	1:1	Rack mountable Tower	External	
RT Series 1-3 kVA	On-line	1:1	Rack mountable Tower	Internal External	
RT Series 5-20 kVA	On-line	1:1 (5-10 kVA) 3:1, 3:3 (10-20 kVA)	Rack mountable Tower	External	
Ultron Family 20 kVA or higher, Three-Phase UPS					
HPH Series 20-200 kVA	On-line	3:3	Stand-alone	Internal (BN/B) External	
NT Series 20-500 kVA	On-line	3:1, 3:3	Stand-alone	External	Isolation transformer
DPS Series 300-1200 kVA	On-line	3:3	Stand-alone	External	
DPM Series 250-1250 kVA	On-line	3:3	Stand-alone	External	480 V, only for project
Modulon Family 20 kVA or higher, Three-Phase Modular UPS					
DPH Series 20-200 kVA	On-line	3:3	Modular	Internal (75k) External	
DPH Series 50-600 kVA	On-line	3:3	Modular	External	

Delta InfraSuite Power Management

Uninterruptible Power Supply, Modulon DPH Series, 20 - 80/120 kVA

The next generation of modular UPS systems designed for ultimate availability, excellent performance, high efficiency, and ideally suited for medium-sized datacenters

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' 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 20 kW per module in a 2U height, offering the smallest footprint and best space utilization. The Modulon DPH Series UPS is the ideal modular power protection for all critical IT applications with its small package, flexibility and seamless integration.

Excellent Power Performance

- The industry's leading power technology offers up to 120 kW within all equipped breakers in 162.8 kW/m³ which supports top/bottom cable entry without additional cabinets to achieve the best utilization compared with its peers
- High AC-AC efficiency over 96% and ECO mode to 99% results 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) is close to zero without downtime risk
- Redundant components and dual CAN bus delivers highest system availability and avoids single point of failure
- Key components aging pre-warning mechanism provides proactive reliability to minimize human error and reduce downtime risk (optional)

High Manageability

- User-friendly 10" color touch screen enables easy local UPS management
- Environment information such as temperature, humidity and transmitting signals from environment sensors 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-80K	DPH-120K
Power Rating	kVA	20, 40, 60, 80	20, 40, 60, 80, 100, 120
	kW	20, 40, 60, 80	20, 40, 60, 80, 100, 120
	Power Module Rating	20 kW	
	Power Module Quantity	Up to 4 units	Up to 6 units
Input	Nominal Voltage	220/380 Vac; 230/400 Vac; 240/415 Vac (3-phase, 4-wire + G)	
	Voltage Range	305~478 Vac (full load); 228~478 Vac (70% load)	
	Current Harmonic Distortion	≤ 2%*	
	Power Factor	> 0.99	
	Frequency	50/60 Hz	
Output	Voltage	220/380 Vac; 230/400 Vac; 240/415 Vac (3-phase, 4-wire + G)	
	Voltage Harmonic Distortion	≤ 1% (linear load); ≤ 4% (non-linear load)	
	Voltage Regulation	±1% (static)	
	Frequency	50/60 Hz	
	Overload Capability	≤ 125%: 10 minutes; ≤ 150%: 1 minute; >150%: 1 second	
Display		10" color touch screen	
Interface	Standard	External battery temperature detection x 4, External switch/breaker status dry contact x 4, Output dry contact x 6, Input dry contact x 4, Parallel port x 2, USB Port (Type A x 2; Type B x 1), RS232 Port x 1, Modbus Port x 1, BMS (RJ45) x 1, Ethernet x 1, SNMP Slot x 1, REPO Port x 1	
Conformance	Safety	CE	
Efficiency	AC-AC	> 96% (Peak efficiency)	
	ECO Mode	99%	
Battery	Nominal Voltage	±240 Vdc (default, ±180 Vdc to ±276 Vdc configurable)	
	Charge Voltage	±272 Vdc (adjustable from 204 Vdc to 312 Vdc)	
	Protection of Battery Deep Discharge	Yes	
Environment	Operating Temperature	0~40°C	
	Relative Humidity	0~95% (non-condensing)	
	Audible Noise (at one meter)	< 65 dB	
	IP Protection	IP20	
Others	Parallel Redundancy and Expansion	Module and system redundancy; Maximum 8 units	
	Battery Start	Yes	
Physical	Dimensions (W x D x H)	600 x 850 x 1445 mm	
	Weight: UPS System (without power modules)	150 kg	162 kg
	Weight: 20 kW Power Module (optional)	18 kg	

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

All specifications are subject to change without prior notice.



20 kW in 2U space



User-friendly 10" color touch screen



Fully modularized and hot-swappable design

Delta InfraSuite Power Management

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

Ultimate Availability Without Compromising Power Efficiency

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

Excellent Power Performance and Efficiency

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

Easy Maintenance

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



Technical Specifications

Model	DPH-75K	DPH-150K	DPH-200K		
Power Rating	kVA / kW	25, 50, 75	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150, 175, 200	
	Power Module Rating	25 kW			
	Power Module Quantity	Up to 3 units	Up to 6 units	Up to 8 units	
Input	Nominal Voltage	380/220 Vac; 400/230 Vac; 415/240 Vac (3 phase, 4-wire +G)			
	Voltage Range	305~478 Vac (full load), 242~478 Vac (60% load)			
	Current Harmonic Distortion	< 3%*			
	Power Factor	> 0.99			
	Frequency	50/60 Hz**			
Output	Voltage	380/220 Vac, 400/230 Vac, 415/240 Vac (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			
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 (W x D x H)	600 x 1090 x 2000 mm			
	Weight	UPS System	310 kg	320 kg	350 kg
		Power Module	32 kg		
	Rack-Mount Power Distribution Cabinet	32 kg			N/A
	Battery Module	29.5 kg	N/A		
Maximum Capacity	Rack-Mount Power Distribution Cabinet (rPDC)	1	2	N/A	
	Breaker Module (for rPDC)	6	12	N/A	
	Battery Module	4	N/A		

* When input vTHD is less than 1%.

** Input frequency range can be adjusted up to 40 Hz to 70 Hz. Delta provides configuration service.

All specifications are subject to change without prior notice.



Scalable and hot-swappable power modules



Optional rPDC with hot-swappable breaker modules and control modules



Optional hot-swappable battery modules



The Modulon DPH is designed with 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

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' demands for high power density, high power performance, and ultimate availability. The brand-new Delta Modulon DPH series UPS 50-300/500/600 kVA achieves the industry's leading power density of 50 kW 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.

Excellent Power Performance

- The industry's leading power density per module at 50 kW in 3U space, and the smallest footprint for 500 kVA in a single rack and 600 kVA 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



Highest Power Density



Largest Power in 3U Space



Leading Energy Efficiency



Battery Health Prediction

Technical Specifications

Model	DPH-300K	DPH-500K	DPH-600K	
Power Rating	kVA	50-300	50-500*	50-600
	kW	50-300	50-450	50-600
	Power Module Rating	50 kW		
	Power Module Quantity	Up to 6 units	Up to 9 units	Up to 12 units
Input	Nominal Voltage	220/380 Vac, 230/400 Vac, 240/415 Vac (3-phase, 4-wire + G)		
	Voltage Range	305~478 Vac (full load), 228~478 Vac (70% load)		
	Current Harmonic Distortion	< 3%**		
	Power Factor	> 0.99		
	Frequency Range	40~70 Hz		
Output	Voltage	220/380 Vac, 230/400 Vac, 240/415 Vac (3-phase, 4-wire + G)		
	Voltage Harmonic Distortion	≤ 0.5% (linear load)		
	Voltage Regulation	±1% (static)		
	Frequency	50/60 Hz ± 0.05 Hz		
	Overload Capability	≤ 125% : 10 minutes; ≤ 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	Up to 96.5%		
	ECO Mode	99%		
Battery	Nominal Voltage	±240 Vdc (default, ±180 Vdc to ±276 Vdc configurable)		
	Charge Voltage	±272 V (adjustable from ±204 V to ±312 V)		
	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: 50 kW Power Module (optional)	36 kg		

* The power module's rating is adjustable to 50 kVA or 55.6 kVA via Modbus. DPH-500K can support 500 kVA / 450kW with nine 55.6 kVA power modules.
 ** When input vTHD is less than 1%.

All specifications are subject to change without prior notice.



Delta InfraSuite Power Management

Uninterruptible Power Supply, Ultron DPS Series, 300-1200 kVA

The Next Generation UPS Answering the Demand of Large Data Centers and Colocations

Delta's superior Ultron DPS series 300-1200 kVA UPS supports unity output power factor to deliver up to 9.6 MW power capacity to meet the demands of large data centers and colocations. 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 minimize system downtime, while lowering the total cost of ownership (TCO).

Ultimate Availability

- Supports up to 9.6 MW power capacity with parallel redundancy and expansion up to 8 units
- Redundant components and dual CAN bus ensures system availability
- Proactive detection of key component status for early diagnosis of UPS malfunction
- Intelligent battery health diagnosis enables better battery maintenance and replacement
- Advanced event analysis, including 10,000 event logs, waveform capturing and key parameters recording, to detect UPS abnormality and ensure higher availability

Excellent Performance

- The industry's leading power density and smallest footprint with the design of both top/bottom cable entry and inbuilt switches
- Unity output power factor guarantees no-rating and provides 100% kW
- AC-AC efficiency of up to 96.5% and 99% in ECO mode resulting in marked energy cost savings
- Supports both VRLA and environment-friendly Li-ion batteries

Sophisticated Manageability and Flexibility

- Environment information, such as security, water, fire, and temperature can be integrated and monitored via the LCD panel of the UPS
- If the UPS is equipped with an external battery management system, the battery information can be integrated and monitored via the LCD panel of the UPS
- Flexible battery quantity of 30-46 pcs achieves optimal battery investment



Technical Specifications

Model	DPS-300K	DPS-400K	DPS-500K	DPS-600K	DPS-800K	DPS-1000K	DPS-1200K	
Power Rating	kVA	300	400	500	600	800	1000	1200
	kW	300	400	500	600	800	1000	1200
Input	Nominal Voltage	220/380 Vac; 230/400 Vac; 240/415 Vac (3-phase, 4-wire + G)						
	Voltage Range	176/304~276/478 Vac (full load)						
	Current Harmonic Distortion	< 3% (with Full Linear Load); < 5% (with Full Non-linear Load)						
	Power Factor	> 0.99						
	Frequency Range	40~70 Hz						
Output	Voltage	220/380 Vac, 230/400 Vac, 240/415 Vac (3-phase, 4-wire + G)						
	Voltage Harmonic Distortion	< 1.5% (Linear Load); < 5% (Non-linear Load)						
	Voltage Regulation	±1 (static); ±5 (dynamic)						
	Power Factor	1						
	Frequency	50/60 Hz (Auto-Selectable)						
	Overload Capability	≤ 125%: 10 minutes; ≤ 150%: 1 minute; >150%: 1 second						
Display	10" color touch screen							
Interface	Standard	RS232, Parallel port, USB, Modbus RS485, Input dry contact, Output dry contact, SNMP card inbuilt in touch screen						
	Optional	Relay I/O card, Battery cabinet temperature sensor cable						
Conformance	Safety	CE						
Efficiency	AC-AC	Up to 96.5%						
	ECO Mode	99%						
Battery	Type	VRLA, LiB						
	Charge Current	90 A	120 A	150 A	180 A	240 A	300 A	360 A
	Battery Quantity	30~46 pcs						
Environment	Operating Temperature	0~40°C						
	Relative Humidity	0~95% (non-condensing)						
	Audible Noise	< 80 dB						
	IP Protection	IP20						
Others	Parallel Redundancy and Expansion	Maximum 8 units						
	Emergency Power Off	Remote and local						
Physical	Dimensions (W x D x H)	600*x 900 x 2000 mm	1200*x 900 x 2000 mm			1800 x 900 x 2000 mm	2450 x 900 x 2000 mm	
	Weight	515 kg	700 kg	811 kg	970 kg	1270 kg	1850 kg	2000 kg

* The width is for the cabinet which has four inbuilt switches.
 * For DPS-300K, only top cable entry is available

All specifications are subject to change without prior notice.



DPS series 300-600 kVA is highly integrated with four built-in switches as standard model



Fully front access and modular design of key components simplifies maintenance and shortens the mean time to repair (MTTR)



User-friendly 10" color touch screen



Ready for Li-ion Batteries

Delta InfraSuite Power System

Rack-Mount Remote Power Panel, 40 kVA

Flexible and Reliable Power Distribution Solution
Ideal for Small Data Centers

Delta's Rack-Mount Remote Power Panel (rRPP) is an ideal power distribution solution for up to 40 kVA. It integrates perfectly with standard server racks and supports either 3 phase or 1 phase output power.

Ensuring maximum reliability and uptime, rRPP supports compartmentalized control and provides real time power quality monitoring and fast response to related events with full-featured management via a web browser.

rRPP allows installation of a maximum of four breaker modules. The breaker modules support tool-less replacement and minimize downtime caused by add-ons and changes to accommodate onsite power distribution needs.



High Flexibility

- Provides 1 phase and 3 phase breaker modules with 16A and 32A rating options
- Highly scalable design allows tool-less installation of a maximum four breaker modules (optional), and supports a maximum 12 branches
- Standard rRPP chassis fits all 1P/3P 16A/32A breaker modules, and easily adapts to power feed requirement changes

High Reliability

- Intelligently monitors system /each branch's status for power usage and viability
- Compartmentalized control with separate breaker module and phases
- Offers abnormal voltage and current alarms
- Provides statistics for system max/min voltage, current, frequency and kW with four hours tracking history
- Proactive management from assets with up to 2000 event logs and data trending

Convenience

- Configurable alarm notification for over/under current and poor power factor
- Each breaker module has LED light for easily identifiable power status
- Freely connects to computer with built-in RS-485 or USB port to monitor branch status and parameter configuration
- Mini SNMP card (optional) allows remote system/branch monitoring. Provides quick summary with glance view, and detailed system/branch power status data are readily available

Technical Specifications

Model		Rack-Mount RPP
Capacity	Full Load Rating	40 kVA / 40 kW
	Max. Current	60 A
Input	Nominal Voltage	220/380 V; 230/400 V; 240/415 V (3-phase, 4-wire + G) 220 V, 230 V, 240 V (1-phase, 2-wire+G)
	Voltage Range	220/380 V ±15%
	Frequency Range	50/60 Hz ± 5%
Output	Nominal Voltage	220/380 V, 230/400 V, 240/415 V (3-phase, 4-wire + G) 220 V, 230 V, 240 V (1-phase, 2-wire+G)
	Breaker Module (optional)	Max. 4 x 16A breaker modules (1-pole or 3-pole), supports 12-pole at most Max. 2 x 30A/32A breaker modules (1-pole or 3-pole), supports 6-pole at most
	Breaker Brand	Schneider, Carling
Interface		RS-485 port x 1, USB port x 1, Mini slot x 1
Safety Standard		CE
Environment	Operating Temperature	0~40°C
	Relative Humidity	0~90% (non-condensing)
	Protection (IP Degree)	IP20
Physical	Dimensions (W x D x H)	811 x 440.2 x 176.4 mm
	Weight: Chassis	18 kg
	Weight: Each Breaker Module (optional)	1.5 kg

All specifications are subject to change without prior notice.



Rear panel (with cover)



Rear panel (without cover)



Remote power monitoring system (optional)

Delta InfraSuite Power System

Rack-Mount Remote Power Panel

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

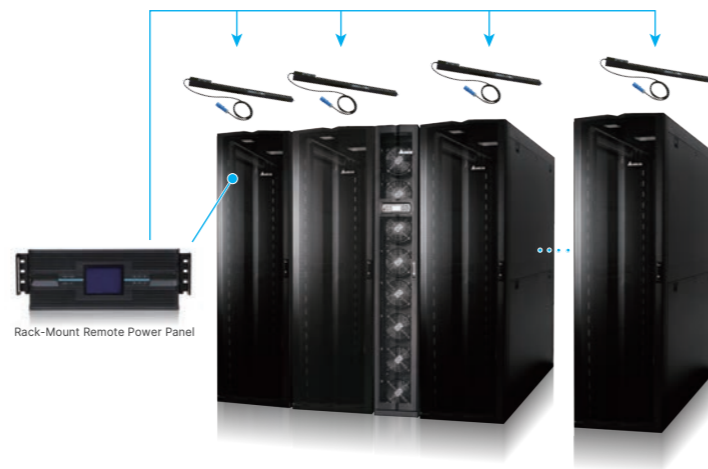


High Flexibility

- Provides three different rated power levels, 30 kVA, 50 kVA and 80 kVA, 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 such as 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 whether 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 a maximum 2000 event logs
- Provides 6 sets of output dry contacts

Technical Specifications

Model	Rack-Mount RPP	
Input	Nominal Voltage	220/380 V; 230/400 V; 240/415 V (3-phase, 4-wire + G)
	Voltage Range	220/380 V ±15%
	Frequency Range	50/60 Hz ± 5%
	Main Input Breaker	63/100/160 A
Output	Full Load Rating	30/50/80 kVA
	Nominal Voltage	220/380 V; 230/400 V; 240/415 V
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)	IP20
Others	Parallel Redundancy	N/A
	Emergency Power Off	Yes (remote)
Physical	Dimensions (W x D x H)	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.



Hot-swappable control module



Hot-swappable breaker module



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 detached 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 uses 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, BS6387	None
IP Rating	The protection level is primarily IP20 for data center applications. It can reach up to IP55 per requirement	Not specified in the general technical data
Resistance to Chemicals and Corrosion	Excellent	Poor
Instantaneous Short-circuit Strength	High	Low
Overload Capacity (+25% 2 hrs)	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

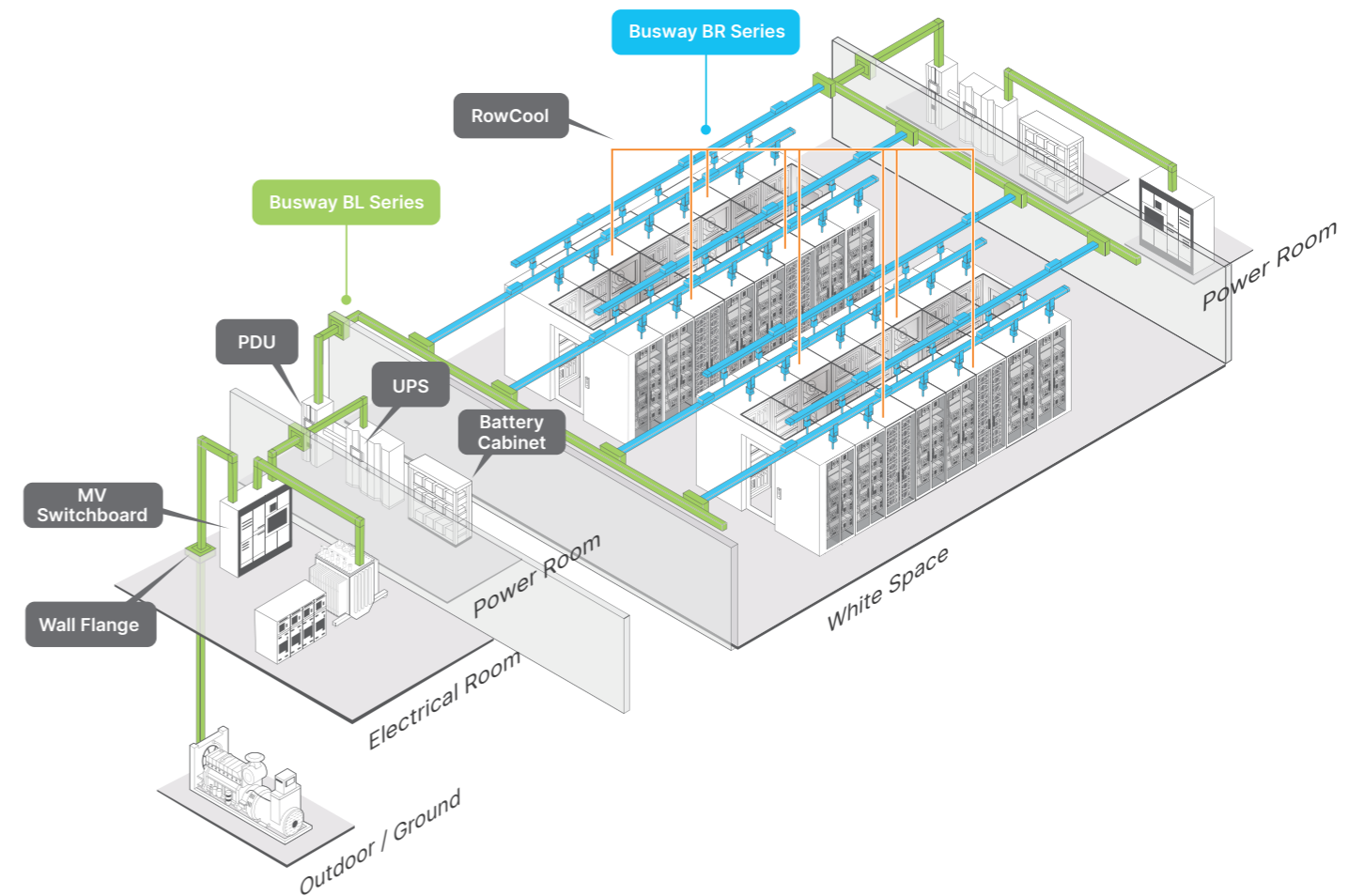
Busway for Data Center Applications

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' requirements. 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.

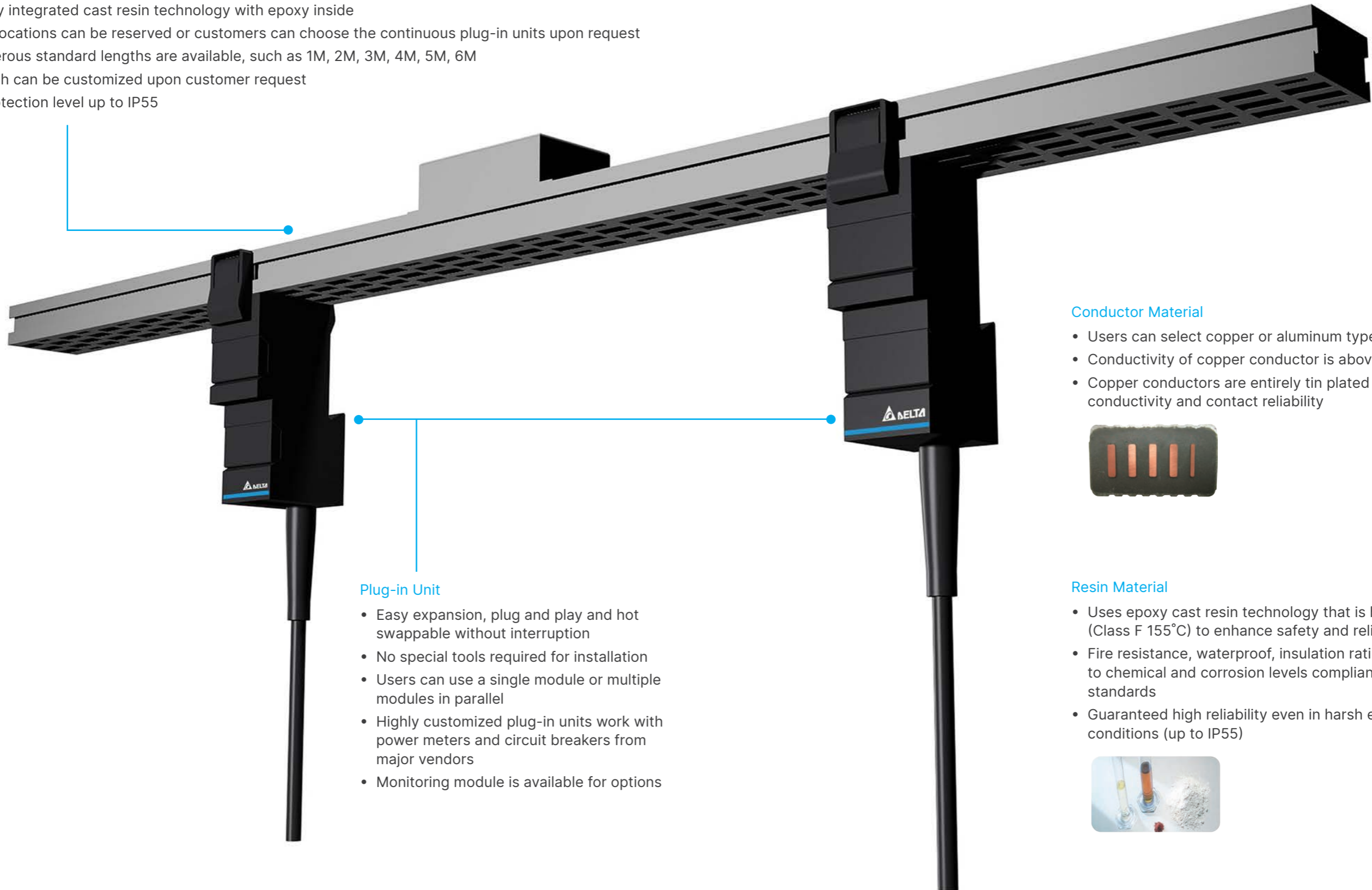
Busway Systems in the Data Center



Product Advantages

Busway Body

- Wide power ratings ranging from 250 A to 1600 A
- Up to 200% neutral
- Highly integrated cast resin technology with epoxy inside
- Pole locations can be reserved or customers 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 IP55



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 levels compliant with industrial standards
- Guaranteed high reliability even in harsh environmental conditions (up to IP55)



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.



LED Current Display and Indicators

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 for cables and power plugs/receptacle

Management

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

Interface

Interface for metered rack PDU	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

Environment

	Operating	Storage
Temperature	0~45/50°C (50°C only available for model AD-XXX/XXX)	-20~65°C
Relative Humidity	5~95%	
Elevation	0~2000 m	0~15000 m

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 for cables and power plugs/receptacle

Technical Specifications

Nominal Input Voltage	Input Phase	Input Current	Plug Type	Output Voltage / Phase	Number of Output Circuit Breakers	Outputs (Number)	LED	SNMP Card	Dimensions (W x H x D)	Weight	Conformance	Model	
Basic Rack PDU													
100-120 Vac	1	16 A	NEMA L5-20P	100-120 Vac / 1	20A/1P One	NEMA 5-15/20R (8)	-	-	440 x 44 x 55 mm	1.56 kg	UL/cUL	PDU7111	
		24 A	NEMA L5-30P	100-120 Vac / 1	20A/1P Two	NEMA 5-15/20R (24)	-	-	48 x 1250 x 50/90 mm	4.88 kg	UL/cUL	PDU5113	
200-240 Vac	1	16 A	NEMA L6-20P	200-240 Vac / 1	20A/1P One	IEC320 C13 (12)	-	-	440 x 44 x 55 mm	1.64 kg	UL/cUL	PDU7211	
			IEC309-16A-3W	200-240 Vac / 1	20A/1P One	IEC320 C13 (12)	-	-	440 x 44 x 55 mm	1.48 kg	CE, CCC	PDU7311	
		24 A	NEMA L6-30P	200-240 Vac / 1	20A/2P Two	IEC320 C13 (24)	-	-	48 x 1250 x 50/90 mm	4.92 kg	UL/cUL	PDU5213	
			IEC309-32A-3W	200-240 Vac / 1	20A/1P Two	IEC320 C19 (4) IEC320 C13 (24)	-	-	48 x 1250 x 50/90 mm	4.90 kg	CE, CCC	PDU5315	
		3Δ	40 A	CS8365C	200-240 Vac / 1	20A/2P Six	IEC320 C13 (12)	-	-	55 x 1000 x 60/90 mm	9.50 kg	UL/cUL	PDUD526
346-415 Vac	3Y	32 A	IEC309-32A-5W	200-240 Vac / 1	20A/1P Six	IEC320 C19 (6)	-	-	440 x 44 x 250 mm	4.80 kg	CE, CCC	PDU7425	
Metered Rack PDU													
100-120 Vac	1	24 A	NEMA L5-30P	100-120 Vac / 1	20A/2P Two	NEMA 5-15/20R (24)	Yes	Option	48 x 1250 x 50/90 mm	5.34 kg	UL/cUL	PDU1113	
200-240 Vac	1	16 A	IEC309-16A-3W	200-240 Vac / 1	20A/2P One	IEC320 C19 (3) IEC320 C13 (24)	Yes	Option	48 x 1250 x 50/90 mm	4.56 kg	CE, CCC	PDU1311	
			IEC309-20A-3W	200-240 Vac / 1	20A/1P Two	IEC320 C13 (24)	Yes	Option	48 x 1250 x 50/90 mm	4.60 kg	UL/cUL	PDU1211B	
		24 A	NEMA L6-30P	200-240 Vac / 1	20A/2P Two	IEC320 C13 (24)	Yes	Option	48 x 1250 x 50/90 mm	5.24 kg	UL/cUL	PDU1213	
				IEC320 C19 (6) IEC320 C13 (36)	Yes	Built-In	55 x 1708 x 55/70 mm	6.40 kg	PSE UL/cUL	AD-240/30A-B AD-240/30A-C			
			IEC309-30A-3W	200-240 Vac / 1	20A/1P Two	IEC320 C19 (4) IEC320 C13 (24)	Yes	Option	48 x 1250 x 50/90 mm	5.12 kg	UL/cUL	PDU1313B	
		32 A	IEC309-32A-3W	200-240 Vac / 1	20A/2P Two	IEC320 C19 (4) IEC320 C13 (24)	Yes	Option	48 x 1250 x 50/90 mm	5.44 kg	CE, CCC	PDU1315	
				200-240 Vac / 1	20A/1P Two	IEC320 C19 (6) IEC320 C13 (36)	Yes	Built-In	55 x 1708 x 55 mm	5.90 kg	CE	AD-240/32M	
		40 A	IEC309-60A-3W	200-240 Vac / 1	20A/1P Three	IEC320 C19 (3) IEC320 C13 (36)	Yes	Option	48 x 1560 x 50/90 mm	7.94 kg	UL/cUL	PDU2316B	
		3Δ	28 A	CS8365C	200-240 Vac / 1	20A/2P Three	IEC320 C19 (6) IEC320 C13 (30)	Yes	Built-In	55 x 1708 x 55 mm	8.20 kg	UL/cUL	AD-208/50B-B
					200-240 Vac / 1	20A/2P Three	IEC320 C19 (6) IEC320 C13 (30)	Yes	Option	48 x 1780 x 50/100 mm	9.00 kg	UL/cUL	PDUE525
200-240 Vac / 1	20A/2P Three				IEC320 C13 (36)	Yes	Option	48 x 1560 x 50/100 mm	8.00 kg	UL/cUL	PDU2525		
55 A	IEC309-63A-4W	200-240 Vac / 1	20A/2P Six	IEC320 C19 (12) IEC320 C13 (12)	Yes	Built-In	58 x 1750 x 60/100 mm	12.80 kg	CE	PDUE928			
346-415 Vac	3Y	16 A	IEC309-16A-5W	200-240 Vac / 1	20A/2P Three	IEC320 C19 (3) IEC320 C13 (36)	Yes	Option	48 x 1560 x 50/90 mm	6.06 kg	CE, CCC	PDU2421	
			IEC309-20A-5W	200-240 Vac / 1	20A/1P Three	IEC320 C19 (3) IEC320 C13 (36)	Yes	Built-In	58 x 1750 x 60/100 mm	6.86 kg	UL/cUL	PDUE421B	
		24A	IEC309-30A-5W	200-240 Vac / 1	20A/1P Six	IEC320 C19 (18) IEC320 C13 (6)	Yes	Built-In	58 x 1750 x 60/100 mm	8.30 kg	UL/cUL	PDUE423B	
				200-240Vac / 1	35A/2P Three	IEC320 C19 (9) IEC320 C13 (3)	Yes	Option	48 x 1250 x 50/100 mm	6.45 kg	CE, CCC	PDU1425	
						IEC320 C19 (15) IEC320 C13 (3)	Yes	Option	48 x 1560 x 50/100 mm	7.22 kg	CE	PDU1425-T	
		35A/1P Three	IEC320 C19 (3) IEC320 C13 (36)	Yes	Option	48 x 1660 x 50/100 mm	8.30 kg	CE	PDU4425				
			IEC320 C19 (3) IEC320 C13 (24)	Yes	Option	48 x 1535 x 50/100 mm	7.10 kg	CE	PDU4425-M				
		32 A (UL 24 A)	IEC309-32A-5W	200-240 Vac / 1	20A/1P Six	IEC320 C19 (6) IEC320 C13 (30)	Yes	Built-In	55 x 1708 x 55/70 mm	8.00 kg	UL/cUL, CE	AD-240/32J	
48 A	IEC309-63A-5W	200-240 Vac / 1	20A/1P Nine	IEC320 C19 (18) IEC320 C13 (6)	Yes	Built-In	58 x 1750 x 60/100 mm	13.40 kg	CE	PDUE428			
						IEC320 C19 (18) IEC320 C13 (36)	Yes	Built-In	56 x 2325 x 60/100 mm	15.10 kg	CE	PDUE428II	

All specifications are subject to change without prior notice.

Delta InfraSuite Power Management

Rack-Mount Static Transfer Switch

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 datacenter 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.

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



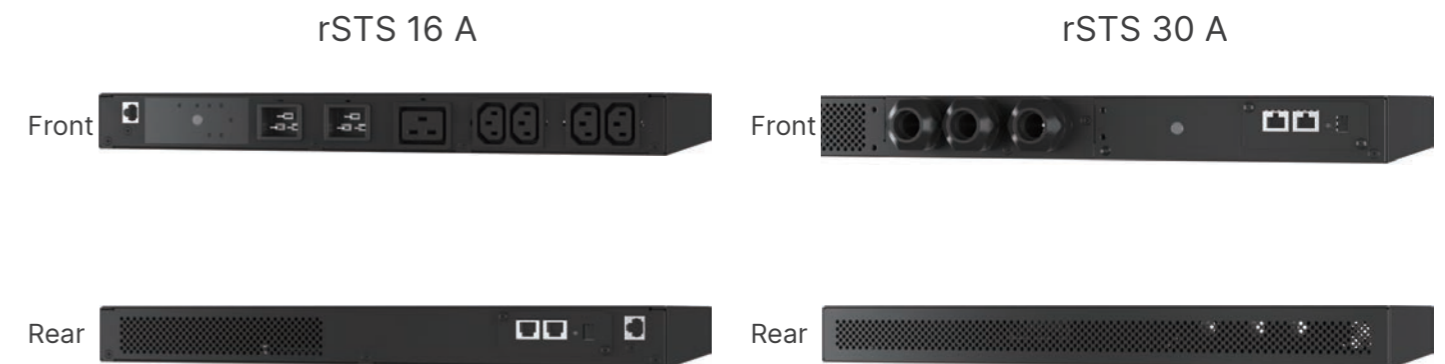
▲ Supports power redundant configurations for high reliability

Technical Specifications

Model	STS16002SR	STS30002SR
Rated Current	16 A	30 A*
Regulatory	CE / UL 62368	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	
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)	43 x 440 x 385 mm	43 x 440 x 385 mm / 43 x 440 x 390 mm
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 25.6 A.

All specifications are subject to change without prior notice.



Product only available for: EMEA, South America, SEA, India, Taiwan, South Korea.

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 manages power, network and optic cables
- Tool-less removable roof cable ports for easier cable access and management
- Removable bottom cover allows 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 supports a well-managed and organized data room

Flexibility

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

Safety

- Supports up to 1420 kg 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



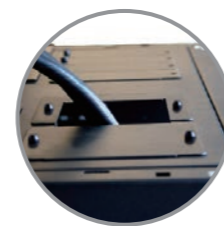
Roof Cable Trough



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. 63 A)
Environmental	RoHS

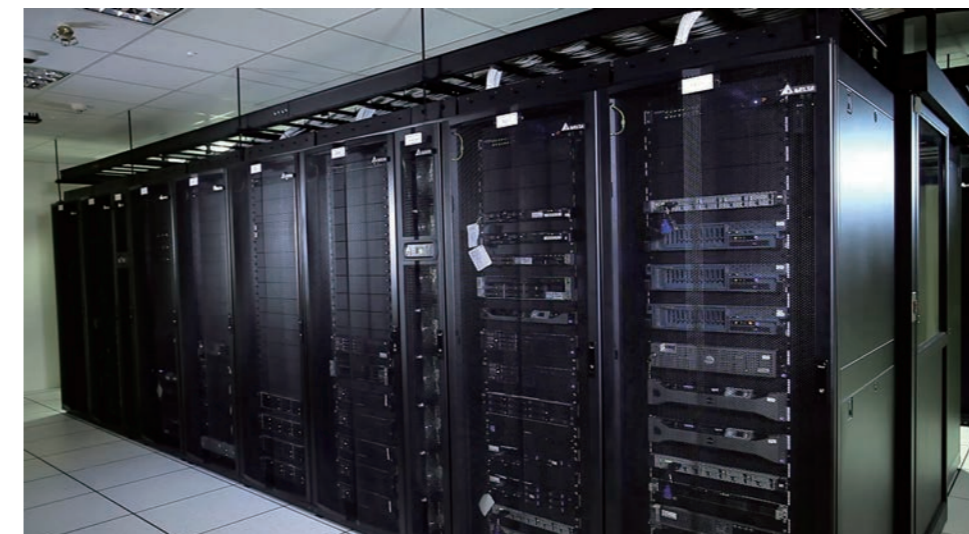
Environment

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

Physical

Item	Model	Dimensions (W x H x D)	Packing Dimensions (W x H x D)	Net Weight
1	SR3110	800 (19") x 2000 x 1100 mm	830 x 1160 x 2156 mm	150 kg
2	SR1110	600 x 2000 x 1100 mm	630 x 1160 x 2156 mm	137 kg
3	SR3160	800 (19") x 2000 x 1200 mm	830 x 1260 x 2156 mm	160 kg
4	SR1160	600 x 2000 x 1200 mm	630 x 1260 x 2156 mm	150 kg

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	60 kg
Dimensions (W x D x H)	480.5 x 664 x 44 mm




1U Sliding Shelf

Model	SR9005
Load Capacity	40 kg
Dimensions (W x D x H)	482 x 718 x 44 mm




Bottom Cover

Model	SR9003 / SR8003
Dimensions (W x D x H)	538 x 834.6 x 39 mm / 738 x 834.6 x 39 mm



Cable Ladder

Model	SR7003
Dimensions (W x D x H)	300 x 50 x 1560 mm



Ring Type Wire Holder

Model	SR7004 (10 pcs)
Dimensions (W x D x H)	45 x 85 x 5 mm



1U Blanking Panel

Model	SR9006 (10 pcs/per box)
Dimensions (W x D x T)	482.6 x 43.7 x 1.0 mm



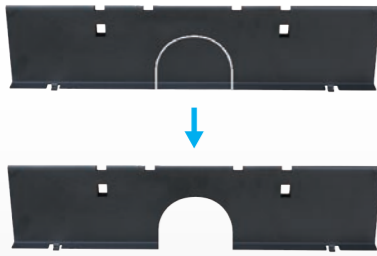
2U Blanking Panel

Model	SR9007 (10 pcs/per box)
Dimensions (W x D x T)	482.6 x 88 x 1.0 mm



Power Cable Trough with Through Hole

Model	SR9001 / SR8001
Dimensions (W x D x H)	580 x 316 x 192 mm / 780 x 316 x 192 mm



Cable Trough with Through Hole

Model	SR9002 / SR8002
Dimensions (W x D x H)	592 x 75 x 125 mm / 792 x 75 x 125 mm



Vertical Cable Management Channel

Model	SR7002 (2 pcs)
Dimensions (W x D x H)	53 x 63 x 888 mm



1U Horizontal Cable Management Channel

Model	SR7001
Dimensions (W x D x H)	482 x 50 x 44 mm

Accessory List

Model	Description	SR1110 / SR1160	SR3110 / SR3160
SR7001	1U HORIZONTAL CABLE MANAGEMENT	●	●
SR7002	VERTICAL CABLE MANAGEMENT CHANNEL	●	●
SR7003	CABLE LADDER, 300 mm	●	●
SR7004	RING TYPE WIRE HOLDER (10pcs / per box)	●	●
SR8001	POWER CABLE TROUGH WITH THROUGH-HOLE, 800 mm		●
SR8002	CABLE TROUGH WITH TROUGH-HOLE, 800 mm		●
SR8003	BOTTOM COVER FOR W800 x D1100 RACK CABINET		● (only for SR3110)
SR9001	POWER CABLE TROUGH WITH THROUGH-HOLE, 600 mm	●	
SR9002	CABLE TROUGH WITH TROUGH-HOLE, 600 mm	●	
SR9003	BOTTOM COVER FOR W600 x D1100 RACK CABINET	● (only for SR1110)	
SR9004	1U FIXED SHELF	●	●
SR9005	1U SLIDING SHELF	●	●
SR9006	1U BLANKING PANEL (10 pcs / per box)	●	●
SR9007	2U BLANKING PANEL (10 pcs / per box)	●	●

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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.

The velocity of IT's 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

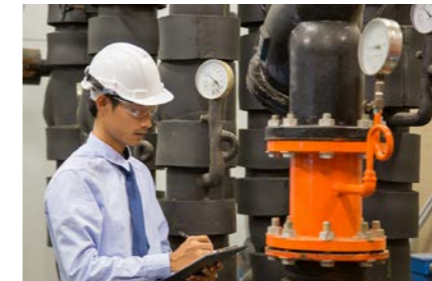
By viewing critical information in the data center, the availability of the data center has been increased. InfraSuite Manager offers advanced alert algorithms across the infrastructure and helps the data center mitigate the risk of downtime.

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



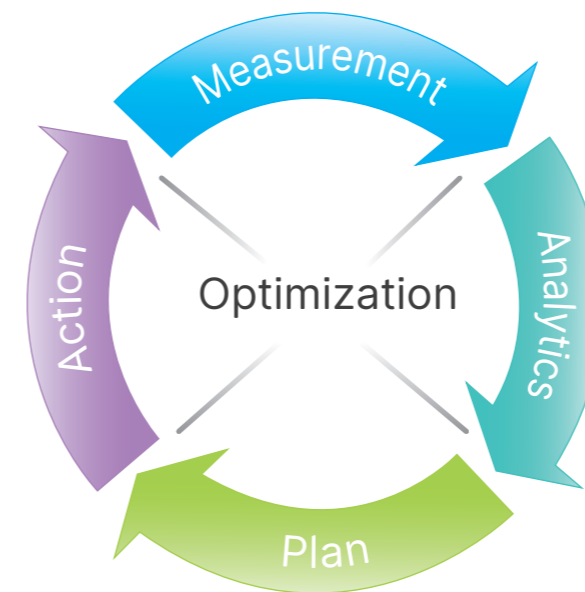
- Access control and surveillance
- Asset management
- Rack utilization, rack U-space, weight, power load and network port for each rack
- Multiple site management
- Alarm notification, reporting and schedule

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

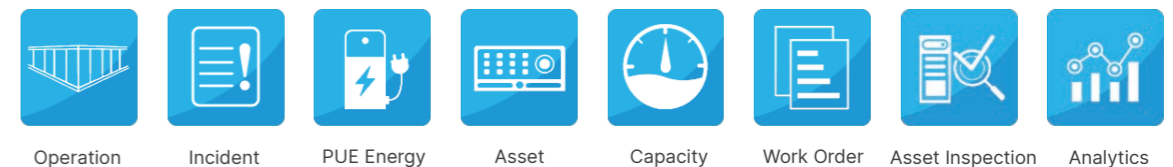
Plan

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





Operation Platform (Base Model)

The operation platform 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

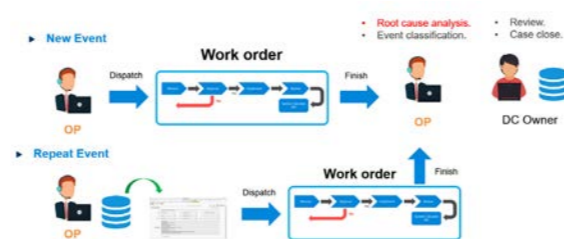


FIGURE 2. User Scenarios of Incident Module



FIGURE 3. Dashboard of PUE

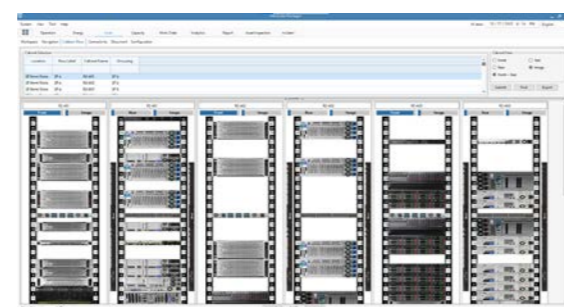


FIGURE 4. Asset Module - Rack Management



Incident Module

The Incident Management functional module is a management platform that was developed based on ITIL-defined processes and stages. It helps users to quickly record and classify incidents that occur in the data center, assigning tasks to appropriate handlers and increasing failure elimination efficiency. The graphs and trend charts make it more efficient to track the incident/failure elimination status. The historical records of these processes can be referenced if there is a similar incident/failure that occurs again in the future.



PUE Energy Module

The Energy Module contains the functions of energy measurement, PUE calculation, electricity tariff formula, and historical data analysis. In addition, it includes organizational energy classification and management mechanisms. 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.



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.



Capacity Module

The 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.



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.



Asset Inspection Module

The Asset Inspection Module 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.



Analysis Module

Analytics Module 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.

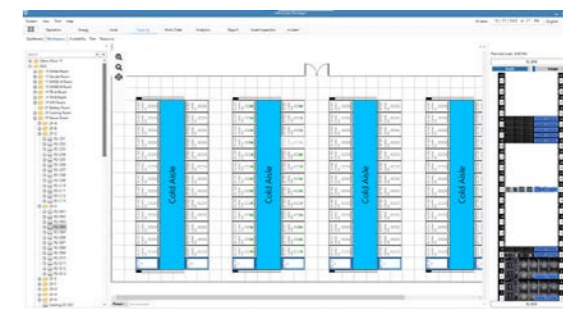


FIGURE 5. Automatic Availability Calculation

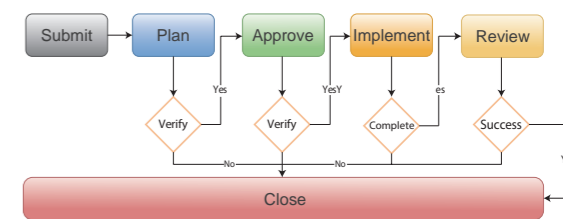


FIGURE 6. The Process of Change Management

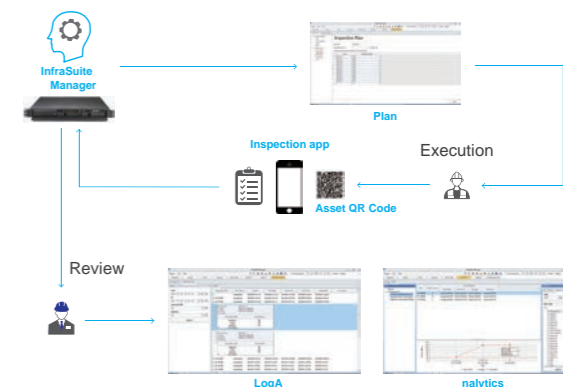


FIGURE 7. The Flow of Inspection Execution and Review

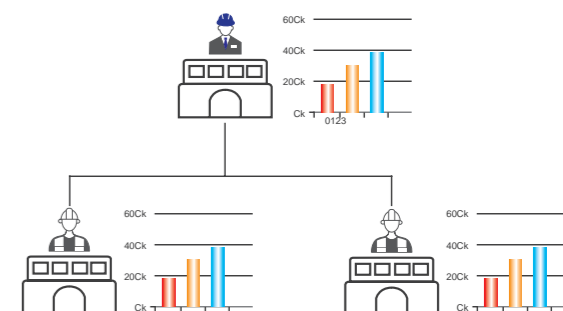


FIGURE 8. The Hierarchy of Energy Analysis

System Requirements

	InfraSuite Manager (Server)	InfraSuite Manager (Windows Application UI)	InfraSuite Manager (Web Monitor UI)
Hardware	CPU: > 2 GHz Memory: ≥ 16 G Free HD Space: 500G mirrored	CPU: > 2 GHz Memory: ≥ 8 G	CPU: > 2 GHz Memory: ≥ 8 G
Software	Supported OS: Windows 10, Windows Server 2016, 2019, 2022	Supported OS: Windows 10, Windows Server 2016, 2019, 2022	Recommended Web Browser: Google Chrome, Mozilla Firefox and Microsoft Edge.

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's fully featured DCIM software solution.

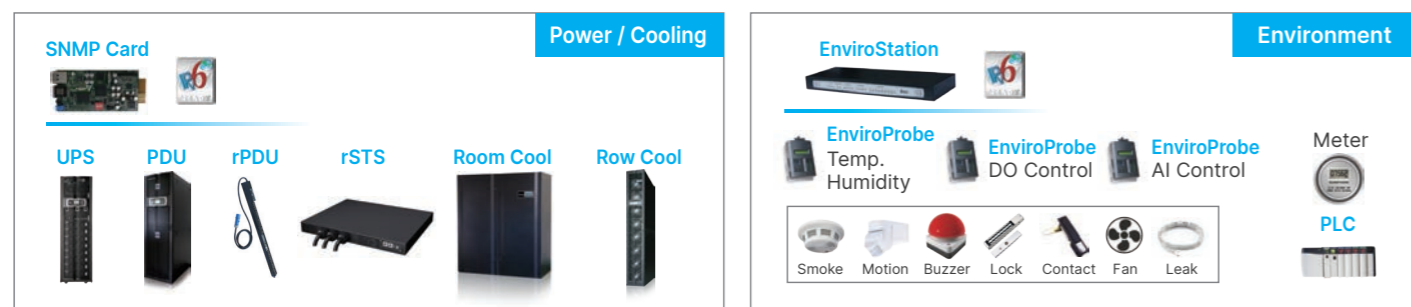
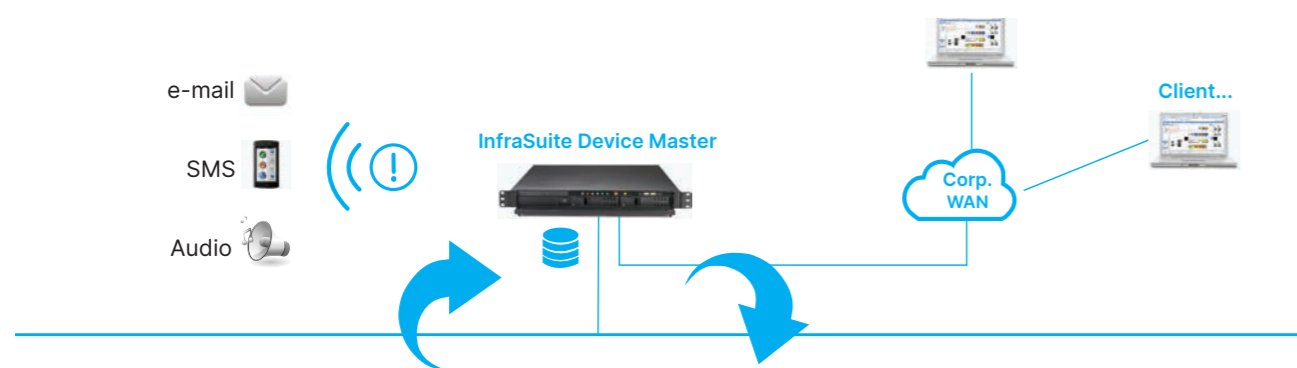


FIGURE 1. Delta InfraSuite Device Master Monitoring Application

Free
Download

To download InfraSuite Device Master, go to:
<https://www.deltaww.com/en-us/products/management-system/data-center-infrasuite-device-master>

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 based on user preference.

System Requirements

	InfraSuite Device Master (Server)	InfraSuite Device Master (Windows Application UI)	InfraSuite Device Master (Web Monitor UI)
Hardware	CPU: > 2 GHz Memory: ≥ 4 G Free HD Space: ≥ 50 G	CPU: > 2 GHz Memory: ≥ 4 G	CPU: > 2 GHz Memory: ≥ 4 G
Software	Supported OS: Windows 10, Windows Server 2016, 2019, 2022	Supported OS: Windows 10, Windows Server 2016, 2019, 2022	Recommended Browser: Google Chrome, Mozilla Firefox and Microsoft Edge.



FIGURE 2. Navigational Graphics

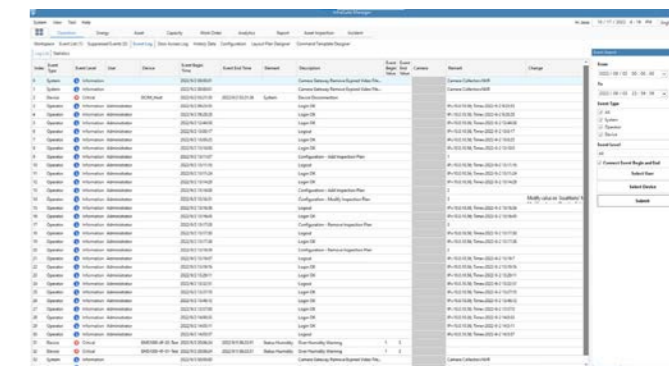


FIGURE 3. Event Log List

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, and 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 provides faster management response and more effective operations
- Setting manager password offers higher security
- SNMP allows easy integration with any enterprise management system

Convenience

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

Flexibility

- Supports SNMP communication protocol
- Sets 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: 0~10 Vdc Current: 4~20 mA
	RTD	Range: 0~50°C Accuracy: ±1°C with 3-wire PT100
	Resistance Temperature Detection (x1)	Supports 2-wire or 3-wire resistance
	Leakage	Detect Voltage: < 1 V (alarm signal with S-1FP leak sensor)
Output	Sensor HUB	For connection with sensor devices (such as smoke detectors, fire detectors, door sensors and others) and supports: +12 V, 0.8 A (max) +24 V, 1.0 A (max) One port limit 0.6 A
	Delta Bus	+12 V, 0.8 A (max)
	Relay Output	26 Vdc (max), 0.8 A (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)	Connects 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.

Delta InfraSuite Management System

EnviroProbe

EnviroProbe monitors temperature and 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 and others) 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

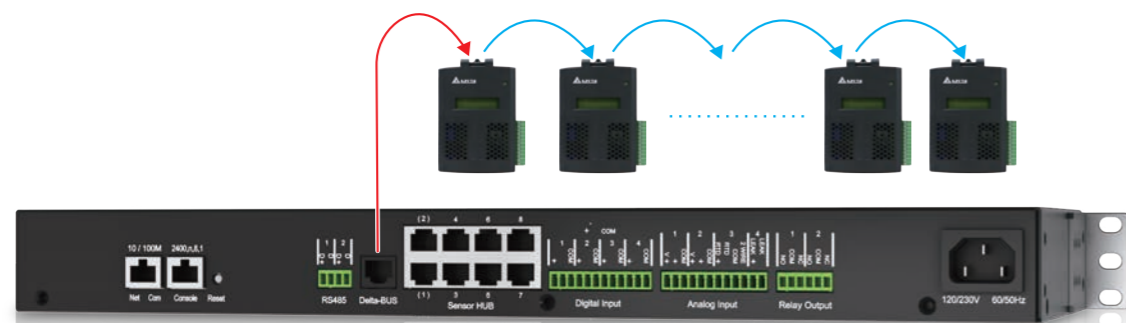
- Monitors temperature, humidity of the environment
- Backlight LCD display
- Digital/analog inputs and outputs

Convenience

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

Flexibility

- Works 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: 5~24 Vdc, 1~8 mA; Dry Contacts: Open/Short Status	N/A	Voltage: 0~10 Vdc (12 bit) Current: 0~20 mA (12 bit)
Output	N/A	Contact voltage / Contact current / Contact tolerance 60 Vdc / 1 A / 60 W; 30 Vac / 2.08 A / 62.5 VA	Voltage: 0~10 Vdc (12 bit) Current: 4~20 mA (12 bit)
Cascade Number to EMS2000	Up to 16 units	Up to 4 units	Up to 5 units
Dimensions (W x D x H)	Product 66 x 33 x 103 mm		
	Package 91 x 42 x 133 mm		
Weight	Net Weight 120 g	130 g	
	Gross Weight 140 g	150 g	
Environment	Temperature	Operation: 0~60°C Storage: -20~60°C Accuracy: ±0.4°C & 0~60°C	Storage: 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' diverse requirements. Applicable sectors cover cloud, colocation, telecommunication, semiconductor, precision manufacturing, enterprises, education, and more.

Various design options can also be implemented for optimal solutions. Delta's comprehensive offerings include hot aisle or cold aisle containment, chilled water temperature setting, free cooling technology, and more. These 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 x 365 days of continuous operation requirements for a constant temperature and humidity in a critical equipment environment, such as for:

- Data centers for small to medium enterprises
- Cloud data center
- Colocation data center
- Prefabricated data center
- Medical equipment room
- Research laboratory
- Precision manufacturing equipment room



Delta InfraSuite Precision Cooling

RowCool Series 29/43/70/95 kW, 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 260 kW. 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.

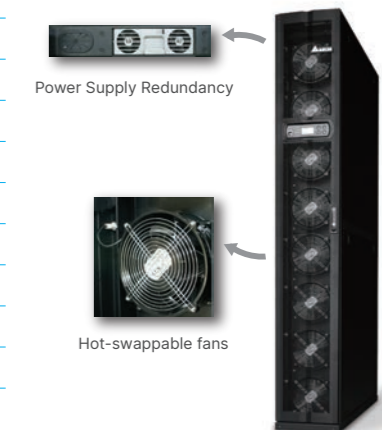
High Flexibility

- 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 (HCH1850)	CW 43 kW (HCH1870)
Power	Input	1-phase 220~240 V, 50/60 Hz	
Capacity	Total Capacity*	30.8 kW	43.4 kW
	Sensible Capacity*	30.2 kW	43 kW
	Total Capacity**	37.1 kW	50.4 kW
	Sensible Capacity**	37.1 kW	50.4 kW
	Total Capacity***	28.8 kW	36 kW
	Sensible Capacity***	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	
Dimensions (W x D x H)		300 x 1090 x 2000 mm	
Weight		185 kg	187 kg



* Rating capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 7°C.
 ** Maximum capacity is measured at 48.9°C DB / 23.9°C WB / Inlet water temperature 7°C.
 *** 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 70 kW (HCH1CB0)	CW 70 kW (HCH1CB0 Humidity Control)	CW 95 kW (HCH1CD0)	CW 95 kW (HCH1CD0 Humidity Control)
Power	Input	3-phase 380~415 V, 50/60 Hz			
Capacity	Total Capacity*	69.3 kW		92.6 kW	
	Sensible Capacity*	69.3 kW		91.6 kW	
	Total Capacity**	83.1 kW		110.7k W	
	Sensible Capacity**	83.1 kW		110.7 kW	
	Total Capacity***	57.4 kW		79.4 kW	
	Sensible Capacity***	57.3 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			
Dimensions (W x D x H)		600 x 1090 x 2000 mm		600 x 1090**** x 2000 mm	
Weight		368 kg	375 kg	415 kg	422 kg

* Rating capacity is measured at 40.6°C DB / 21.6°C WB / Inlet water temperature 7°C.
 ** Maximum capacity is measured at 48.9°C DB / 23.9°C WB / Inlet water temperature 7°C.
 *** 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.
 **** Depth is 1200 mm for top piping model.

All specifications are subject to change without prior notice.

Product only available for: EMEA, SEA, China, Taiwan, South Korea.

Delta InfraSuite Precision Cooling

RowCool R Series 30/45 kW, Direct Expansion

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



Technical Specifications

Model	R30	R45
Input Power	3-phase+N, 380~415 V, 50/60 Hz	
Capacity*	Total Capacity	30 kW
	Sensible Capacity	45.6 kW
Rating Input Power	10.3 kW	15 kW
Fan Type	EC	
Reheater (optional)	Type	PTC
	Capacity	3 kW
Humidifier (optional)	Type	Wet membrane or electrode
	Capacity	3 kg/hr
Connection	Top / Bottom	
Communication	RS-485 x 1, FE port, USB port, Dry contact	
User Interface	10" touch panel	
Safety Certification	CE, RCM	
Dimensions (W x H x D)	300 x 2000 x 1090 mm	600 x 2000 x 1090 mm
Weight	Cooling	216 kg
	Cooling with reheater & wet membrane humidifier	220 kg
	Cooling with reheater & electrode humidifier	223 kg

* Capacity is measured at 40.6°C return air dry bulb, 21.6°C wet bulb and 35°C outdoor temperature.

Outdoor Unit

Model	R30 Condenser (RDA037)	R45 Condenser (RDA059)
Input Power	3-phase, 380~415 V, 50/60 Hz	
Fan	Type	Variable fan speed
	Number	1
Dimensions (W x H x D) (up flow)	1725 x 1120 x 1100 mm	
Weight	110 kg	120 kg

All specifications are subject to change without prior notice.

Product only available for: SEA, China, Taiwan.

CoolDoor 30/50 kW, Rear Door Cooling

The Delta CoolDoor is a rear door cooling unit with EC fans designed for high power density racks and offering high reliability and energy efficiency. Combined with Delta's CDU or chiller, CoolDoor removes heat at its source without hot air going into the room. CoolDoor is compatible with various racks through its connect duct. It doesn't need an added footprint and raised floor to save valuable space and reduce the CAPEX of your data center. CoolDoor features a turbo boost function that helps to dissipate heat from an adjacent rack that may have issues. It is also equipped with a leakage detection function that provides an alarm notification to the user or automatically shuts down the water supply when a leakage is detected.

Delta is pleased to customize your CoolDoor units to provide the optimal products for your data center.



Technical Specifications

Model	D30 (RWC030)	D50 (RWC050)
Input Power	1-phase, 200-240 V, 50/60 Hz	
Total Capacity*	30 kW	50 kW
Sensible Heat Factor (SHF)	1	
Rating Input Power	0.56 kW	0.66 kW
Fan Type	EC	
Fan Quantity	4	
Air Flow	3605 CFM	3885 CFM
Water Flow	55 LPM	90 LPM
Valve	Two way valve (FC type)	
Piping Connection	Top / Bottom	
Pipe Size	1"	1 1/4"
Water Leakage Detector	Standard, 4m length	
User Interface	LCD screen with 4 LED indicators	
Complies With	UL 60335, CE	
Dimensions (W x H x D)	600 x 1970 x 345 mm (23.6 x 77.5 x 13.5 in)	
Weight	90 kg (198.4 lb)	98 kg (216 lb)

* Conditions for rated capacity for D30 at return air 42°C (108°F), inlet water 12°C (54°F) and outlet water 20°C (68°F)

* Conditions for rated capacity for D50 at return air 50°C (122°F), inlet water 12°C (54°F) and outlet water 20°C (68°F)

All specifications are subject to change without prior notice.

Optional Items:

- Air Pressure Control
- SNMP
- Flow Meter
- PICV Valve
- Inlet Water Solenoid Valve
- Quick Disconnect Couplings
- BACnet
- T/RH Sensor at Cold Aisle
- Dual Power Feed/ ATS

Product only available for: EMEA, SEA, South America.

Delta InfraSuite Precision Cooling

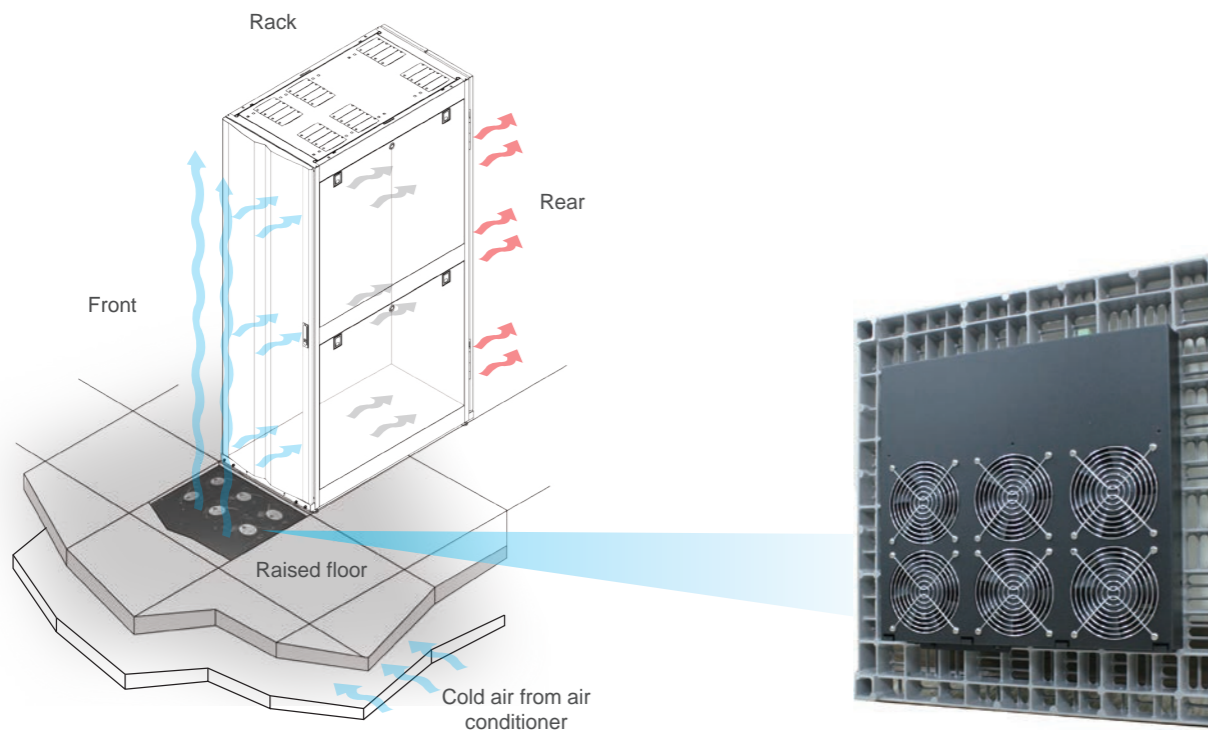
Air Distribution Unit

For data centers with raised floors, the space beneath the floors is 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.

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.



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.



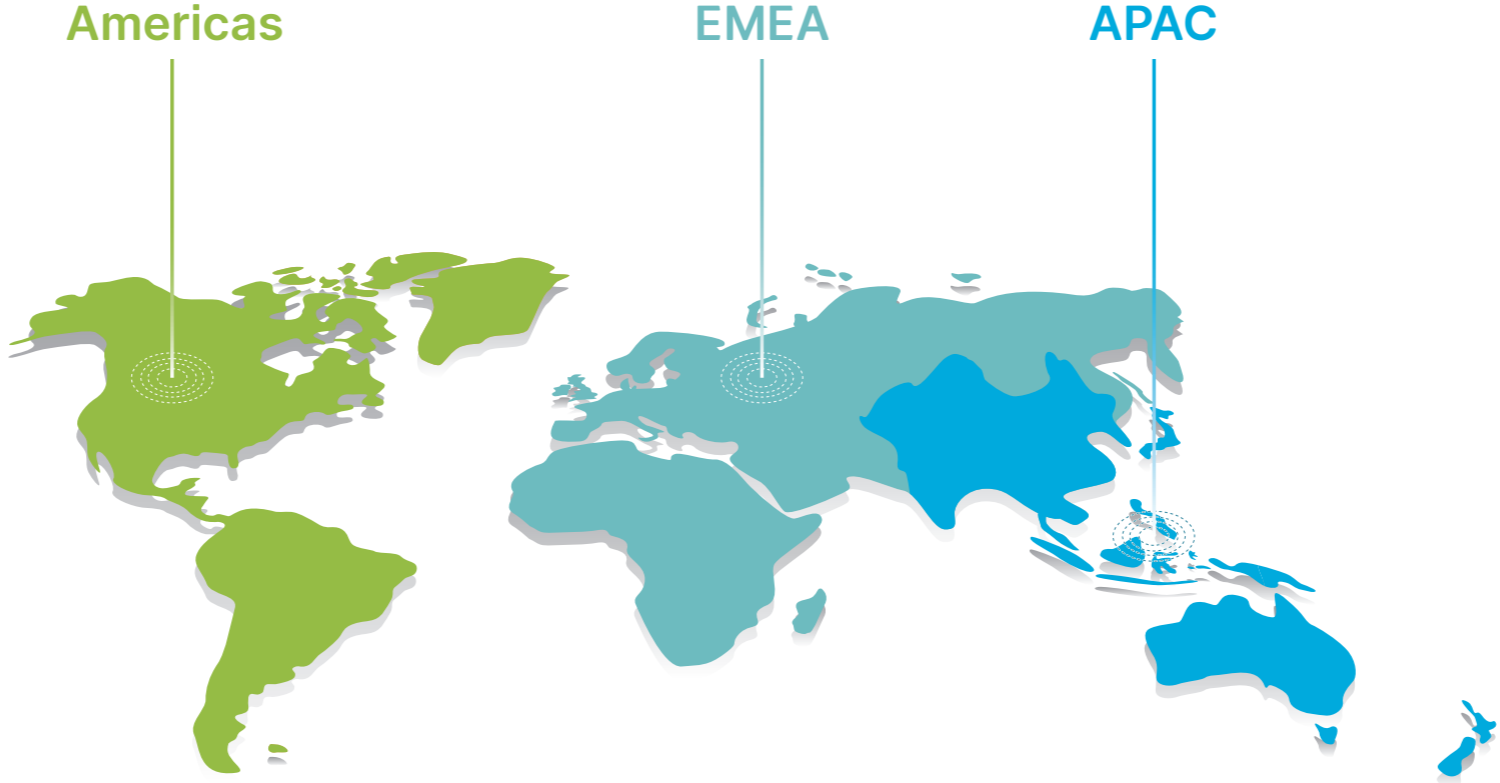
Up to 6 fan modules and air flow up to 1000 CFM



Easily installed beneath raised floor

Product only available for: EMEA, SEA, China, Taiwan, South Korea.

Data Center Footprints



Washington
Data Center 17 MW



Spain
Atos Data Center 200 kW



China
Lin Kong Port Data Center 26 MW
Famous Bank's Data Center 6 MW



Vietnam
HTC-ITC Data Center Uptime Tier III
TCCF 750 kW



California
Web Service Data Center 40 MW



Germany
Colo Data Center 10 MW



Taiwan
National Data Center 5.5 MW
Formosa Plastics Data Center 750kW



India
Leading Colo Data Center 28 MW
Telecom Data Center 7 MW



Ohio / Virginia
Web Service Data Center 60 MW



The Netherlands
Bytesnet, Colocation 6 MW



Thailand
Telecom Data Center 5.2 MW



Australia
Prefabricated Modular Data Center
22 MW+

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Delta Group



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