Delta Intelligent Building Technologies

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The Difference in Data Centers

Reliable. Open. Integrated. Secure.

Built for the Conditions **That Define Mission Critical**

Data center automation must continuously coordinate cooling, power, alarms, and access within tight operating limits and with near-zero tolerance for disruption.



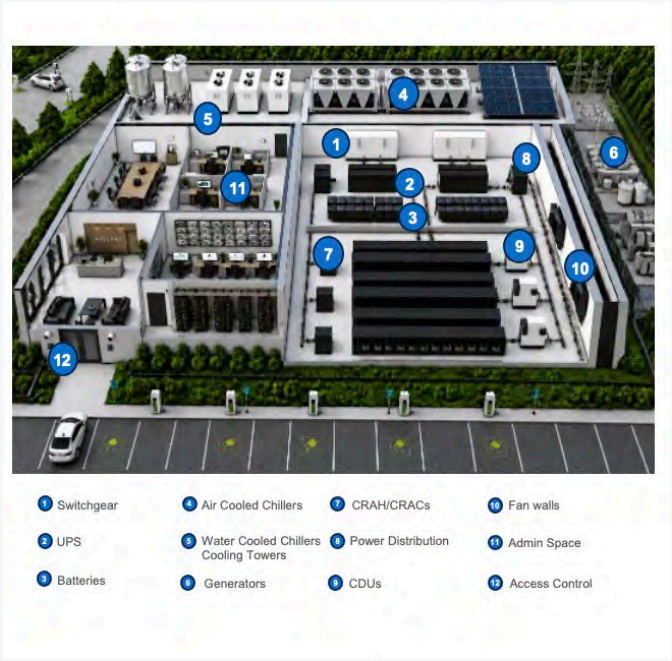
01	**24/7 OPERATION**	Continuous monitoring, remote access, data logging, and automated response.
02	**THERMAL DENSITY**	Dynamic compute loads increase the need for precise air and liquid cooling control.
03	**POWER TRANSPARENCY**	Operators need correlated electrical status, load, quality, and failure information.
04	**OT CYBERSECURITY**	Encrypted communication and controlled access protect connected operational systems.

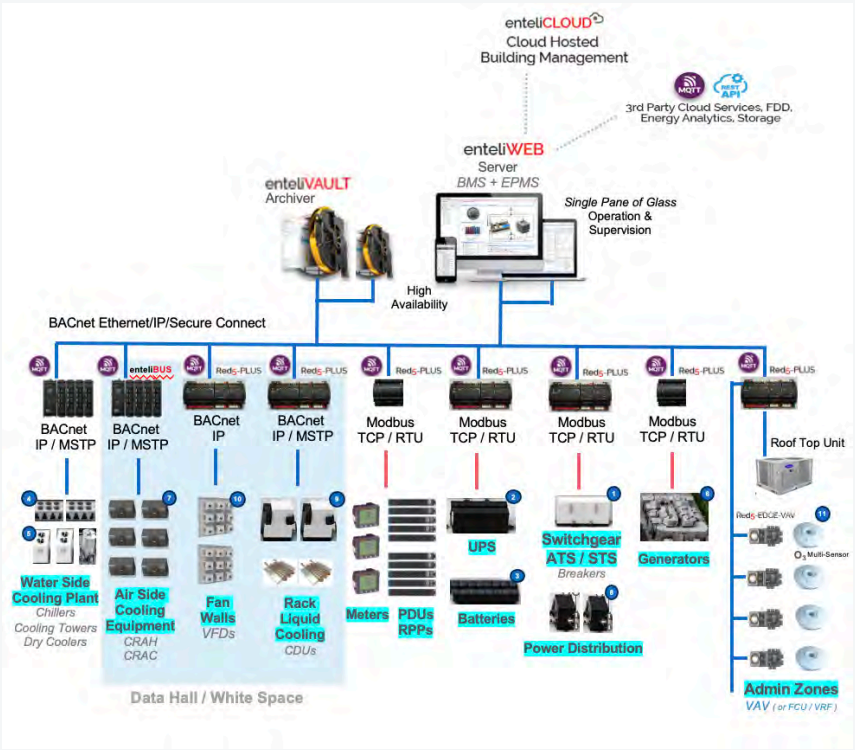
Confidence in Mission-Critical Performance

Data centers are the backbone of today's digital economy. With rising compute density, increased cooling demands, and the pressure of 24/7 uptime, every system must perform flawlessly. Delta Controls delivers a complete building automation and energy management solution built on open BACnet architecture, integrating everything from central plants and white spaces to EPMS, office environments, and physical access control all through a single pane of glass with enteliWEB.

DATA CENTER SOLUTIONS

Integrated BMS/EPMS Architecture





01

Open, Interoperable Platform

Delta eliminates vendor lock-in and ensures every part of your data center and administrative facility from chillers and switchgear to HVAC and access control can seamlessly operate as one unified, future-ready system.

OPEN BY DESIGN

Native BACnet/IP, BACnet Secure Connect, Modbus, MQTT, and SNMP integration.

OEM READY

Works seamlessly with third-party OEM equipment such as chillers, CRACs, CDUs, UPS systems, switchgear, and PDUs.

FLEXIBLE NETWORKS

Supports flexible topologies: Ethernet, IP, 10Base-T1L (retrofit friendly), and MS/TP.

02

Full System Coverage

Delta IBT provides complete coverage across the data center environment: from central plant operations and white space to administrative zones, EPMS, supervision, and physical security.

Delta Controls' enteliBUS and Red5 Plus platforms handle plant, white space, and EPMS, while LOYTEC room automation extends coordinated HVAC, lighting, shading, and occupant control into administrative spaces. Open BACnet connectivity unifes the complete facility in enteliWEB.



ONE FACILITY.

ONE OPEN VIEW.

BMS + EPMS + ROOMS + ACCESS

Central Plant & Cooling Infrastructure

Powered by enteliBUS Modular System

Delta's **enteliBUS controllers** deliver robust, scalable control for the most demanding I/O environments in the central plant and white space air systems.

With enteliBUS, operators unify plant operations with OEM cooling equipment, optimizing performance and enabling predictive sequencing that cuts energy use by up to **30%**.



Applications

- Chilled water plants, cooling towers, condensers, heat exchangers, pumps.
- Data hall air plants with high-density cooling needs.

Integration

- Native BACnet/IP, Ethernet, and MS/TP.
- Modbus TCP/RTU and SNMP for embedded OEM systems.

Key Advantages

- BACnet Secure Connect encryption for cyber protection.
- Fully programmable with GCL+ and PG Python.
- Scalable to 500+ I/O points in a single chassis.
- Hot-swappable modules for zero downtime maintenance.
- Hardware-level hand overrides for mission-critical assurance.



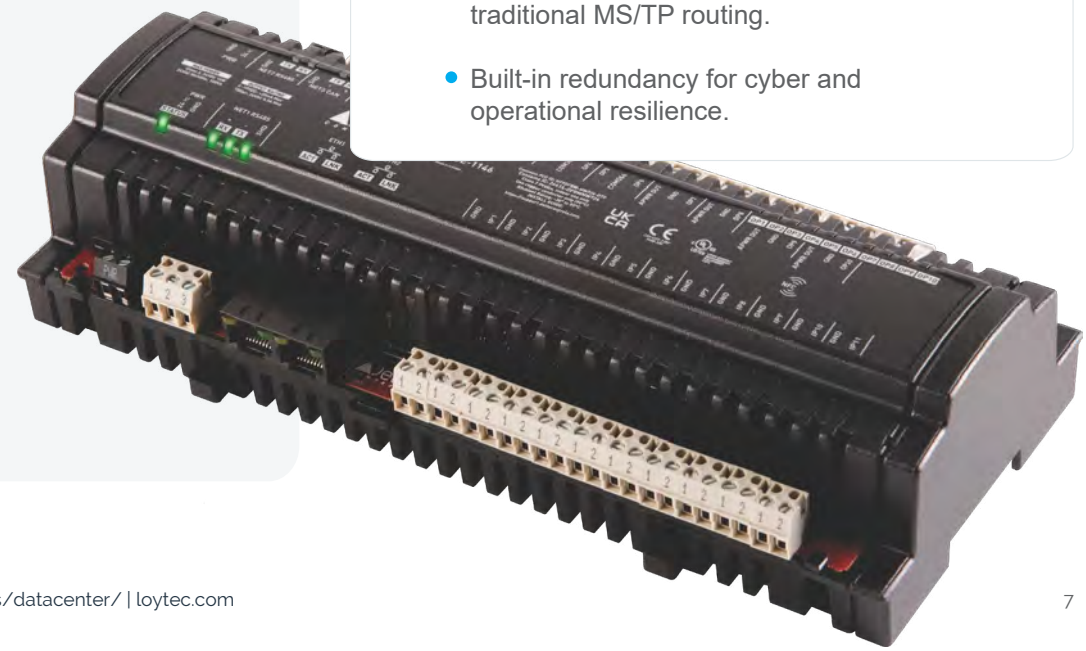
Data Hall, HVAC Systems & EPMS Integration

Powered by Red5 Plus Controllers

The **Red5 Plus platform** is purpose-built for medium and lower I/O density applications, bridging HVAC, EPMS, and white space systems into one ecosystem.

Red5 Plus extends Delta's open-platform advantage by converging HVAC and EPMS into one view, enabling operators to manage energy, equipment, and uptime through the **single pane of glass in enteliWEB.**





Applications

- CRAHs, CRACs, fan arrays, large multi-zone RTUs, VAV AHUs (admin zones).
- Liquid cooling (CDUs).
- EPMS systems including UPS, batteries,
- MV/LV switchgear, ATS, PDUs, and RPPs.

Integration

- BACnet/IP, Ethernet, MS/TP, and Secure Connect.
- Modbus TCP/RTU, SNMP, and MQTT for IoT and energy data streaming.

Key Advantages

- Functions as a BACnet Supervisor/Master Router with secure redundancy.
- Advanced IoT support with Node-RED and Python modules.
- Supports both flat architectures and traditional MS/TP routing.
- Built-in redundancy for cyber and operational resilience.

Beyond the Data Hall

Administrative & Office Zones

- LOYTEC L-ROC or Red5 Plus Room coordinates HVAC, DALI lighting, shading, occupancy, and room comfort.
- Native BACnet/IP and BACnet/SC connectivity integrates room data into enteliWEB.
- Flexible local control through L-PAD, L-STAT, EZNT and mobile interfaces.



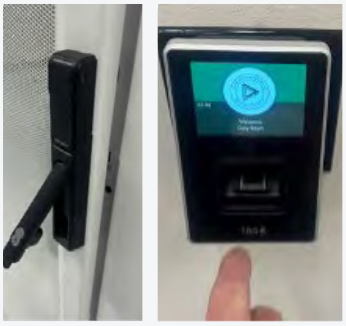
Energy & Power Monitoring (EPMS)

- Native integration of meters, breakers, PDUs, and RPPs.
- PUE and WUE reporting with real-time analytics.
- Dynamic electrical one-line diagrams support reliability and sustainability decisions.



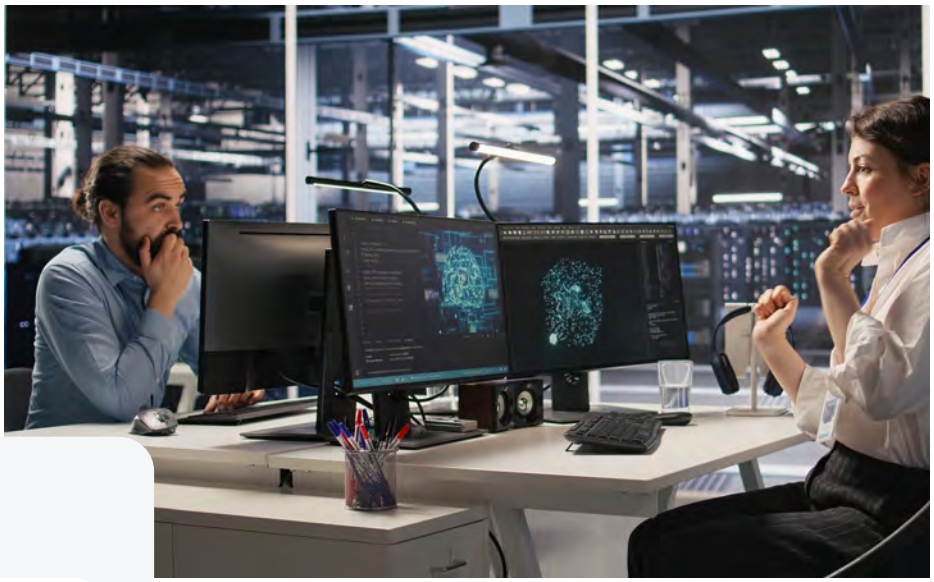
Physical Security

- Integrated access control for perimeters, data halls, and server cabinets.
- Support for biometrics, cabinet locks, and enterprise systems.
- Protection of both network infrastructure and physical assets.



Administrative Space, Fully Automated

The mission-critical strategy does not stop at the data hall. LOYTEC L-ROC gives offices meeting rooms, corridors, and support spaces coordinated control of HVAC, lighting, shading, occupancy, and room comfort - all connected to the broader Delta IBT ecosystem through open BACnet.



THE ADMIN SPACE CONTROL STACK



L-PAD 7 + L-STAT or O3 and EZNT

Intuitive local control for meeting rooms, offices and shared spaces.



Red5 Room or LRoc 800

Room controller for up to three spaces with DALI, SMI, Bluetooth Mesh, I/O, and BACnet.



SENSE | CONNECT

- **HVAC**
  Heating, cooling, and ventilation respond to occupancy and room demand.
- **LIGHTING**
  DALI and Bluetooth Mesh lighting use presence and available daylight.
- **COMFORT**
  Occupants adjust temperature, lighting, and shades locally without breaking system strategy.

BACnet/IP + BACnet/SC TO enteliWEB

03

Single Pane of Glass – enteliWEB

enteliWEB delivers the true single pane of glass that data centers demand - unifying BMS, EPMS, and access control into one secure platform, giving operators real-time visibility, control, and compliance reporting across every mission-critical system.



UNIFIED

Unified management of **BMS + EPMS** for complete operational visibility.

REAL-TIME

Real-time dashboards with alarms, audit logs, and compliance reporting.

SCALABLE

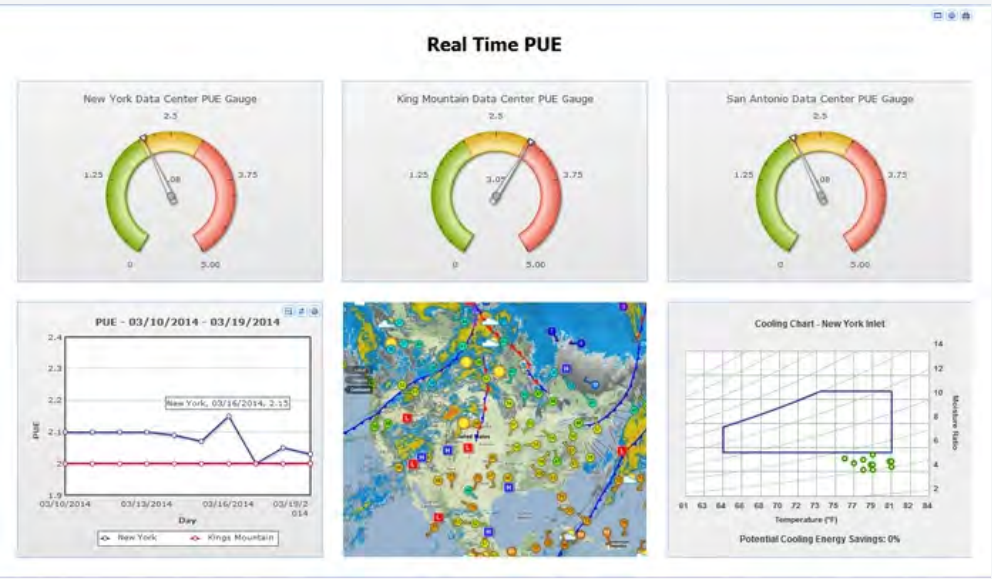
Supports up to 600,000+ points with rich, customizable graphics.

ARCHIVED

Optional enteliVAULT® for secure, redundant archiving.

Turn Operating Data Into Energy Decisions

The value of an integrated platform is not just visibility. It is the ability to compare facility energy, IT load, and cooling performance -then turn those relationships into operating action and reportable results.



MEASURE WHAT MATTERS

PUE

WUE

LOAD

Trend energy and water performance alongside load, weather, equipment state, and alarm history.

OPTIMIZE

Refine setpoints, economizer operation, sequencing, and cooling response.

REPORT

Support ESG, SLA, and internal performance reporting with exportable dashboards.

MANAGE BY EXCEPTION

Use trends and alarms to focus attention where performance is moving outside expectations.

04

Backed by Delta Electronics – **From Grid to Chip**

Delta IBT combines the building automation expertise of Delta Controls and LOYTEC with the broader capabilities of Delta Electronics.

Power Electronics

Switchgear, UPS, redundant power supplies, and fan walls.

Cooling & HVAC

Controls and OEM partnerships for air and liquid cooling systems.

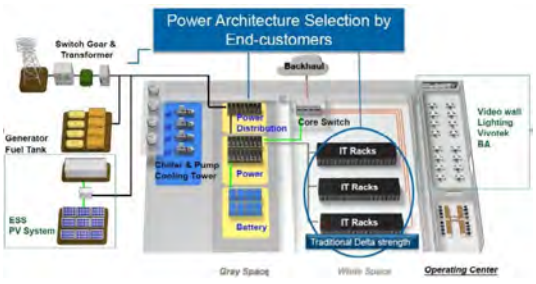
Automation & Analytics

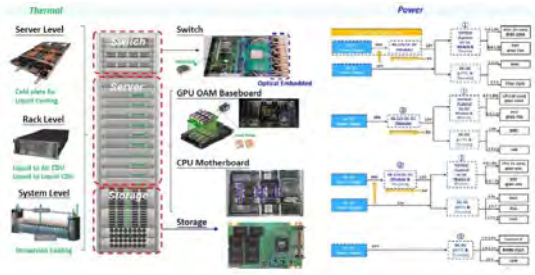
Controllers, room automation, enteliWEB, Python, and Node-RED integration.

Semiconductors

Efficiency from the grid feeding the facility to the chips inside the server.

THE COMPLETE DATA CENTER





This breadth means we can deliver solutions from the grid feeding your facility all the way to the chips inside the servers — a unique advantage in the data center market.

Cybersecurity Across the Operational Network

04

Security is addressed through encrypted communication, purpose-built hardware options, controlled provisioning, and a product-development process focused on operational technology risk.

BACnet SECURE CONNECT

Encrypted and authenticated BACnet communication protects supervisory traffic across routed IP networks

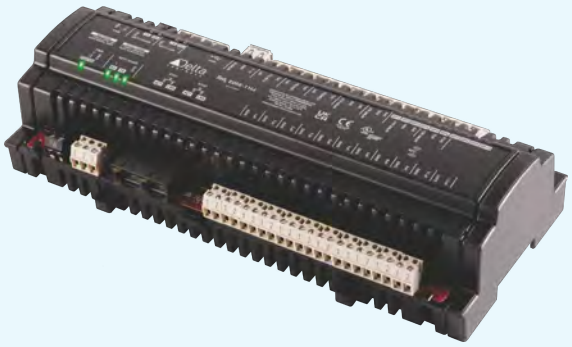
RED5 SECURE FACILITY

Hardware variants remove NFC, BLE, Wi-Fi components, and Ethernet bypass relays for high-security environments.

SECURE DEVELOPMENT

Practices are informed by OWASP, ISO 27001, and IEC 62443-4-1, with advisories and vulnerability reporting.

SECURE FACILITY CONTROLLERS KEEP FACILITIES SAFE



- BACnet/IP and BACnet/SC support.
- Equivalent I/O, memory, and processing capability.
- Provisioning through enteliWEB without wireless dependency.

The Delta IBT Difference

FOR DATA CENTERS



Enhanced Operational Efficiency

Optimize energy and cooling performance dynamically.



Real-Time Monitoring & Analytics

Detect anomalies before they impact uptime.

Scalability & Flexibility

Modular, programmable, and future-ready across technical and administrative spaces.



Enhanced Security & Compliance

Physical and network security with BACnet/SC and integrated access control.



Sustainability Commitment

Predictive energy analytics and demand-based room control reduce carbon footprint.

User-Friendly Interface

Simplify operations with intuitive dashboards and local room controls.

Conclusion: Do It Right in Mission-Critical Environments

Delta IBT does not just automate systems. We bring together Delta Controls and LOYTEC technologies to give data centers an **open, scalable, and secure ecosystem** across HVAC, EPMS, administrative spaces, access control, analytics, and DCIM workfows. The result is a facility that can run more **efficiently, sustainably, and securely** - ready for the AI-driven future of hyperscale and modular data center