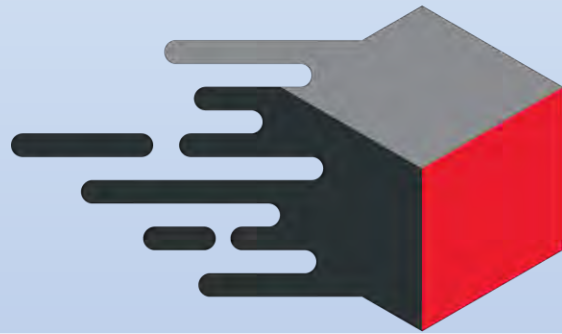




PDS Webinar

March 25, 2026



Professional Development Services

Presented by: David Amos
Director of PDS

PDS – Professional Development Services

Webinar Topics

- **Intro to PDS**
 - Team – Who we are
 - Services – What we do
 - Customer Engagement – How we work with you, our Customers
- **Solutions**
 - Custom thermostats
 - Graphics solutions
 - App-like experience without App cost
 - Control Shop drawings
 - Software solutions
 - enteliWEB Modules
 - DLM (Delta Loadable Modules)
 - Panel-building > plug n' play install
 - Metering / Dashboards / Normalization

Time Breakout:

~40 mins – Presentation

~20 mins – Q&A

What does PDS *do* and *not do* ?

We develop and execute on **contracted *Projects*** to customers

We do ***not* develop *Products**** to serve a market segment (*done by PD*)

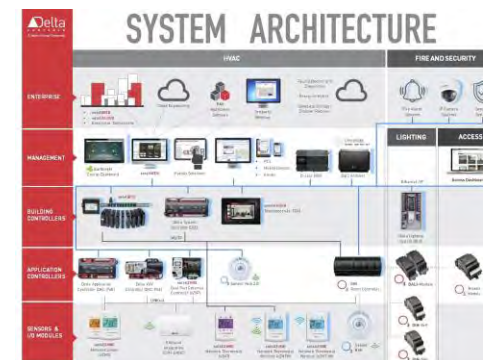
***we may release products for general sale, that have been previously developed in the course of executing our customer contracts.**



➤ **1 to 1 relationship**



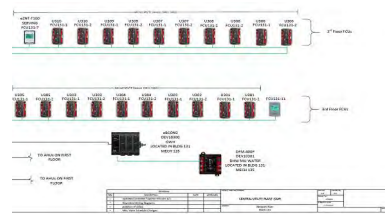
➤ **1 to Many relationship**



Control System Solutions (CSS):

CSS Lead + (2) CSS Specialist

- *Control Drawings*
- *Programming*
- *Application Engineering*



Lead: Zach Solis



Keian Kok



Jackie Foxon



Project Manager
Brad Wyers

UX Solutions (UXS):

UXS Lead + (1) UX Solutions Specialist

- *enteliVIZ Graphics*
- *Graphics Training*
- *eZNS buttons / Logos*



Lead: Ryan Leung



Tiffany Yiu



Project Manager
Darren Brant

Software Solutions (SWS):

Software Solutions Lead + (3) Software Solutions Specialists

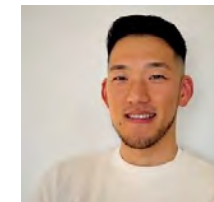
- *Custom Software Development*
- *enteliWEB Modules*
- *Integration Drivers*



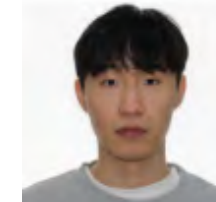
Lead: John Shaw



Aria Deng



Shinya Aoi



Will Chun



Director of PDS
David Amos

CUBE Integration Module
Latest Version: 4.15.14
Compatibility: 4.15
Paid

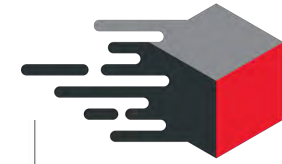
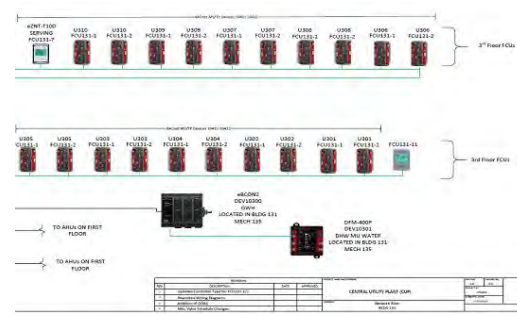
Program BACnet devices based on configuration created in the CUBE USA business management platform.

[View](#)

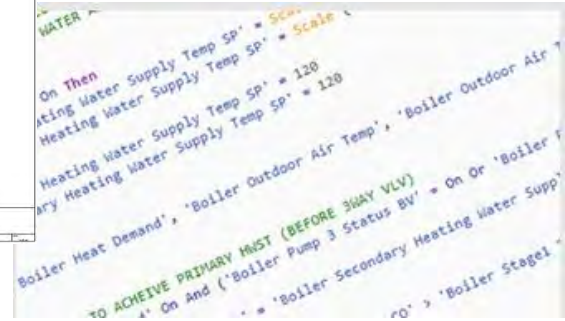
CSS Team
Control System Solutions
GCL+ Expert Engineers
 Experienced installing, troubleshooting and servicing DDC

Projects Completed
 2025 (2024)

64 (62)

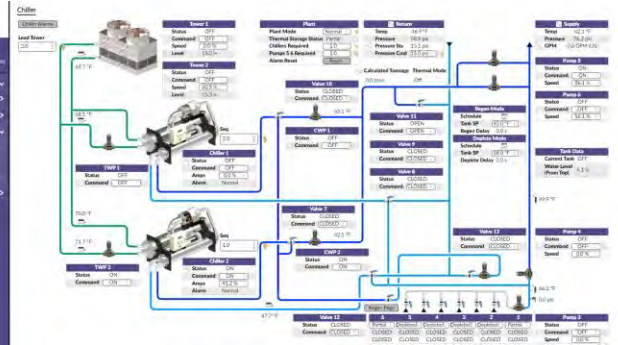


Professional Development Services



UXS Team
User Experience Solutions
Graphics Wizards
 Bring controls to life with branded, animated, intuitive graphical interfaces

70 (67)



SWS Team
Software Solutions
Creative Developers
 Connect data between machines, people, and other machines

102 (81)

CUBE Integration Module
 Latest Version: 4.15.14
 Compatibility: 4.15
 Paid

Program BACnet devices based on con: CUBE USA business management platform

[View](#)

	Card User Import	Synchronize Access Card Users via live connection with LDAP or import from a CSV file, to streamline access control system upgrades to Delta Controls.
	CMMS Module	Sends alarm information to a Computerized Maintenance Management System (CMMS) for automated issue assignment to maintenance personnel. ServiceWorks Global and FSI are currently supported integrations.
	Commissioning Module	Provides a streamlined user interface for commissioning a site. Manage commissioning of objects through a purpose-built workflow.
	CUBE Integration Module	Program BACnet devices based on configuration created in the CUBE USA business management platform.
	Data Transfer Module	Transfer Data between entelWEB Sites, or collect data from a number of online weather and energy-related websites. Use accurate weather information and forecast data to make informed control decisions.



CSS Team

Control System Solutions

GCL+ Expert Engineers

Experienced installing, troubleshooting and servicing DDC

Projects
Completed
2025

64

- Engineering / Shop Drawings
- Network Architecture
- GCL+ Control Programming
- Remote Commissioning
- Energy Optimization Strategies (G36)
- Engineering Consulting and Standards Development
- End-Customer Training

UXS Team

User Experience Solutions

Graphics Wizards

Bring controls to life with branded, animated, intuitive graphical interfaces

70

- enteliVIZ Graphics Projects
- Graphics Templates
- eZNX Thermostat Faceplate Customizations
- UX Consulting and Graphics Template Development
- Basic / Advanced Partner Graphics Training

SWS Team

Software Solutions

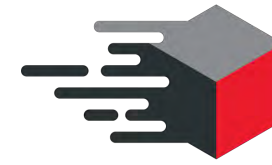
Creative Developers

Connect data between machines, people, and other machines

102

- enteliWEB Modules
- System and Data Integrations
- Red5 DLM (Delta Loadable Modules)
- Software Consulting
- Enterprise Software Development

Limitations: enteliWEB Core Updates, Firmware updates



PDS Services, customer choice: 2 Agreement Paths

PDS Project Quotes

Applies to..

Partner Projects (quoted direct to Partner)

OEMs (quoted to Sales, bundled with proposal for customer)

Corp Accounts (quoted to Sales, bundled with proposal for customer)

Features

- Fixed-Fee
- Defined Scope
- Defined Customer Expectations
- Defined Exclusions
- Warranty

QUOTATION

Quotation number: PDS2221
 Date: October 14, 2021
 Issued by: Darren Brant
 Reference: PAS1968-SRV2221, PAS1968-SRV2222
 Shipment Terms: Ex Works, Surrey BC
 Terms: Time and Materials
 Validity: 30 Days

LIST USD	Multiplier	NET USD	Qty	Total USD
\$ 500.00	0.30	\$ 150.00	82	\$ 12,300.00
\$ 500.00	0.30	\$ 150.00	88	\$ 13,200.00
\$ 500.00	0.30	\$ 150.00	97	\$ 14,550.00
\$ 500.00	0.30	\$ 150.00	23	\$ 3,450.00
\$ 500.00	0.30	\$ 150.00	48	\$ 7,200.00

Scope Of Work [Push To Move](#)

Description	Estimate
Hardwired RTU Programming GCL programming for RTUs hardwired to eBCons	24.00
BACnet RTU Modes and Scheduling Schedule and mode programming for BACnet RTUs with internal controllers	4.00
Zone, EF, UH Programming GCL Programming for hardwired Zones, EFs, UHs etc.	22.00
Schedule and Mode Programming for BACnet ERU Provide scheduling and mode GCL programming for BACnet ERUs that have internal controllers	16.00
Schedule and Mode Programming for BACnet VRF System Provide Occ and mode programming for BACnet VRF System	14.00
Programming for KWH Pulse Meter Setup demand calculations for KWH from DFM-400P	4.00
Master Controller Points Miscellaneous programming for Security Alarm (freezer and comm room temp) and zone status monitoring	8.00
Project Management Meetings etc.	8.00
Total	100.00

PDS Support Agreement (T&M contract)

Benefits

- Streamlined - Avoid delays of quoting
- Priority Scheduling
- Preferred Pricing* (w/min \$)
- Gives you "Scalable workforce"



Available Now!!

Services Offered

Consultation

- Engineering/Programming
- Graphics
- Software Development

Data Services

- Report Customization
- Integration Maintenance
- Network Monitoring
- Archiving and Backup

Software Updates

- enteliWEB
- Firmware
- Custom Modules

Data Services

- Report Customization
- Integration

System Operation

- Energy Optimization
- Continuous comm



Project Initiation



Professional
Development
Services

Initial Project / Proposal
requests to:

sales@deltacontrols.com



For ongoing project
communications:

pds@deltacontrols.com



The screenshot shows a user interface for managing tickets. On the left is a sidebar with navigation icons. The main area is titled "Unresolved tickets in your groups" and shows a list of tickets for the "PAS" group. The list includes columns for checkboxes, subjects, requesters, and requested dates.

	Subject	Requester	Requested
<input type="checkbox"/>	Project Request: Jefferson Hotel	Matt Machese	Apr 08
<input type="checkbox"/>	Delta Contacts	Kerri Rowan	Apr 04
<input type="checkbox"/>	Upgrading to eVault	Nazem Abou Chami	Apr 02
<input type="checkbox"/>	RE: [Professional Development Services] Re: FW: Red5 Status.	Abdul Rahman Al Hur	Apr 02
<input type="checkbox"/>	FW: Custom Stat Order	Joe Williamson	Apr 01
<input type="checkbox"/>	eWEB limitations - tenant alarm emails	Lyndon Shepherd	Mar 20
<input type="checkbox"/>	RE: Wunderlich Malec Purchase Order 69357 **ENG-SVCS FWD TO DCI ORDERS/PDS**	Nicole Eccles	Mar 26
<input type="checkbox"/>	Delta Programming	Carl Gonnermann	Mar 26
<input type="checkbox"/>	RE: Crown Plaza - Madina *Custom eZNS MYLAR# (Crown Plaza) and availability - Please advi...	Abdul Rahman Al Hur	Mar 24
<input type="checkbox"/>	CyrusOne MQTT Follow-Up	Todd Dempsey	Mar 21

PDS Solution Examples

The collage illustrates various PDS solutions across different building types and components:

- Top Left:** A floor plan showing a color-coded zoning system for differential control.
- Top Middle-Left:** A screenshot of a control interface with a table of room data:

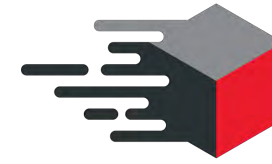
Room No.	Room Name	Setpoint	Actual	Mode	Temp	Humidity	CO2
MEU-1	Office 1	Automatic Set	23.4 °C	Auto	23.0 °C	50 ppm	400
MEU-2	Office 2	Automatic Set	23.0 °C	Auto	23.0 °C	140 ppm	400
MEU-3	Office 3	Automatic Set	23.0 °C	Auto	23.0 °C	187 ppm	400
MEU-4	Office 4	Automatic Set	23.2 °C	Auto	23.0 °C	407 ppm	400
MEU-5	Office 5	Automatic Set	23.2 °C	Auto	23.0 °C	719 ppm	400
MEU-6	Office 6	Automatic Set	23.1 °C	Auto	23.0 °C	719 ppm	400

- Top Middle-Right:** A screenshot of a Delta Zone Point Sensor (A,B,C) interface showing a floor plan with sensor locations.
- Top Right:** A table defining sensor function settings:

Function	Example	Opacity	Colour Value
High Setpoint Differential	Default State	40%	Fill #FF0000
	Mouse Hover	60%	Fill #FF0000
Normal Setpoint Differential	Default State	40%	Fill #00FF00
	Mouse Hover	60%	Fill #00FF00
Low Setpoint Differential	Default State	40%	Fill #0000FF
	Mouse Hover	60%	Fill #0000FF

- Middle Left:** A close-up of a Delta Zone Point Sensor hardware unit with a digital display showing 23.9°C and 52.5% RH.
- Middle Middle-Left:** A screenshot of a Delta website with the slogan "Smarter. Greener. Together. Delta Electronics Americas HQ."
- Middle Middle-Right:** A screenshot of a control interface showing various gauges for Carbon Dioxide, Electric, Natural Gas, and CO2.
- Middle Right:** A screenshot of a control interface showing a floor plan with a "Zoning Setpoint Differential" legend.
- Bottom Left (Top):** A detailed cross-section diagram of a VAV box showing airflow paths, filters, and sensors.
- Bottom Left (Middle):** A screenshot of a control interface showing a bar chart for "Consumption for November 2018" and a table of data.
- Bottom Left (Bottom):** A screenshot of a control interface showing "Data Points - Evaluate Data Point Interactions" with analog data displays.
- Bottom Middle-Left:** A photograph of a building's exterior facade.
- Bottom Middle-Right:** A photograph of a warehouse interior with high ceilings and industrial equipment.
- Bottom Right (Top):** A photograph of a Delta Zone Point Sensor hardware unit.
- Bottom Right (Bottom):** A screenshot of a control interface for "MAIN OFFICE - VAV BOX 101" showing Reheat Value (100%), Room Temperature (71°F), and Damper Position (56%).

PDS Hardware Customization – eZNS / Branding



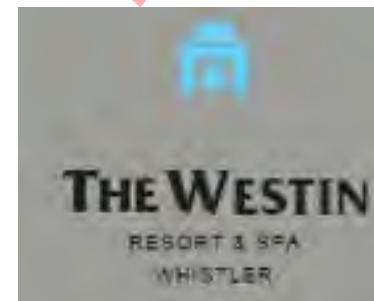
Professional
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Services

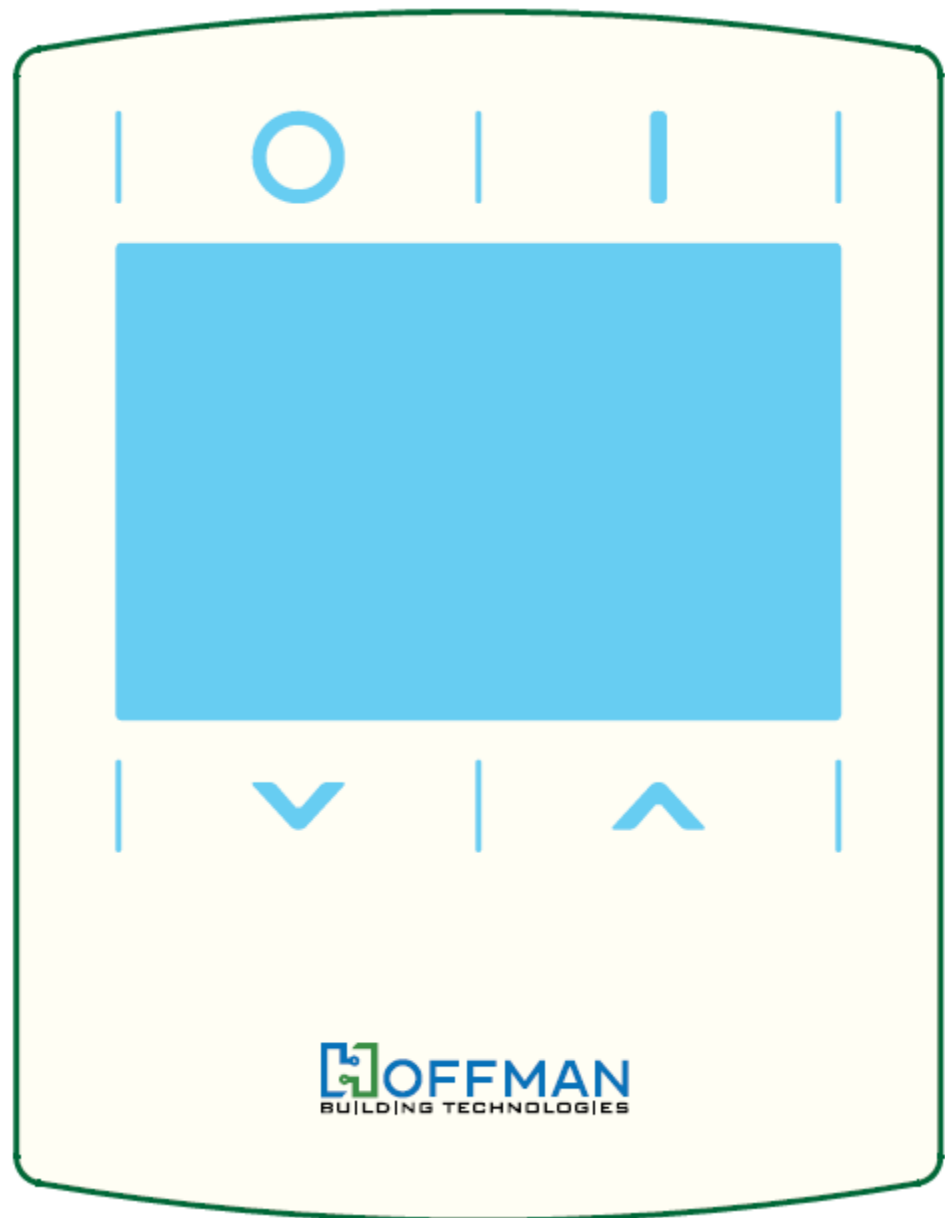
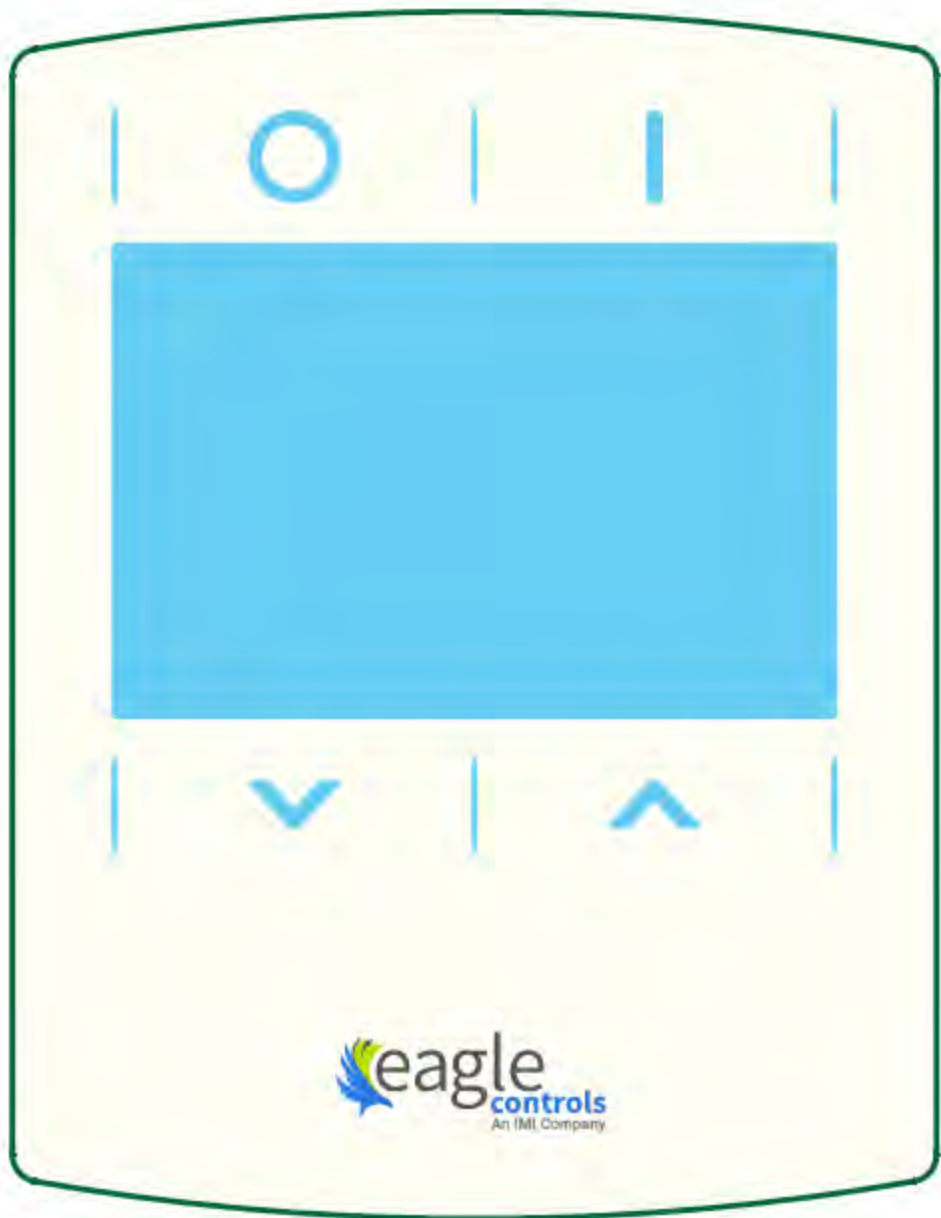


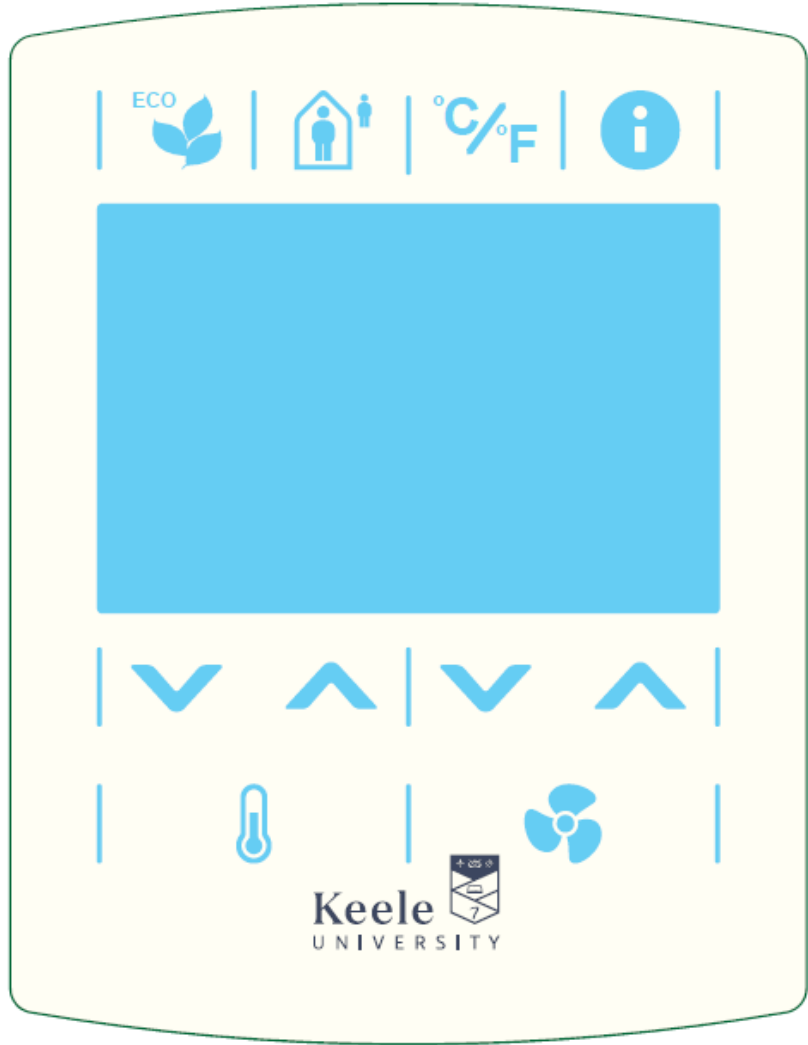
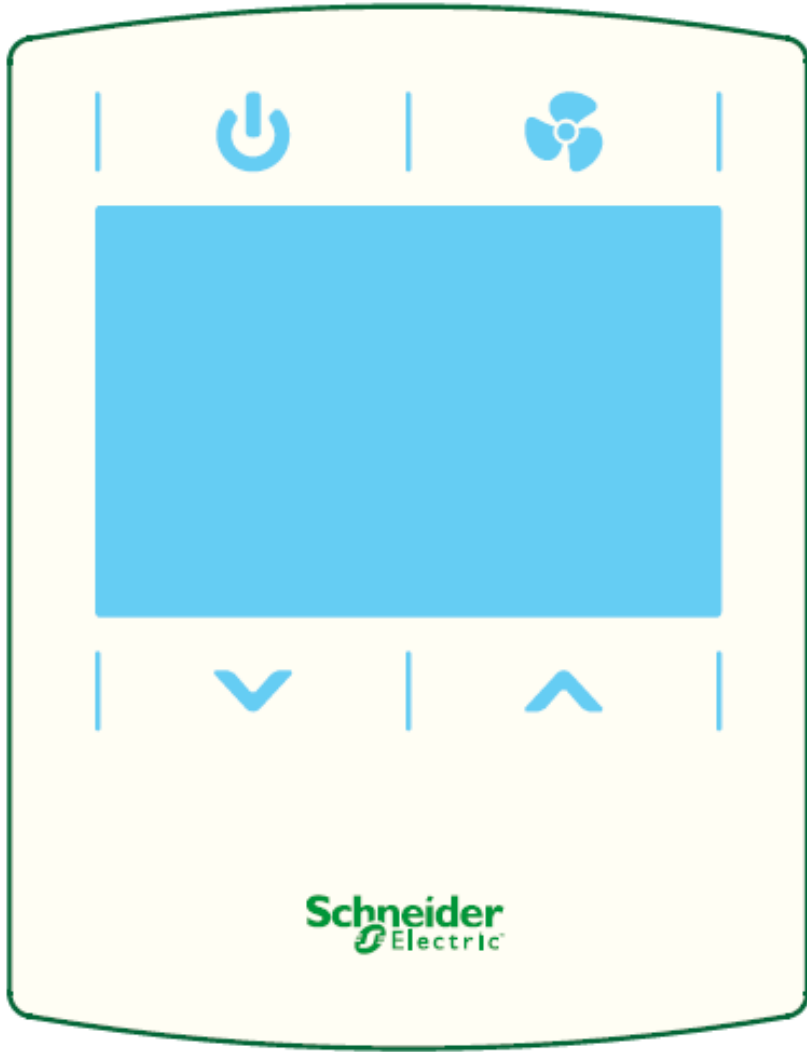
Request for parts/services > email to: sales@deltacontrols.com

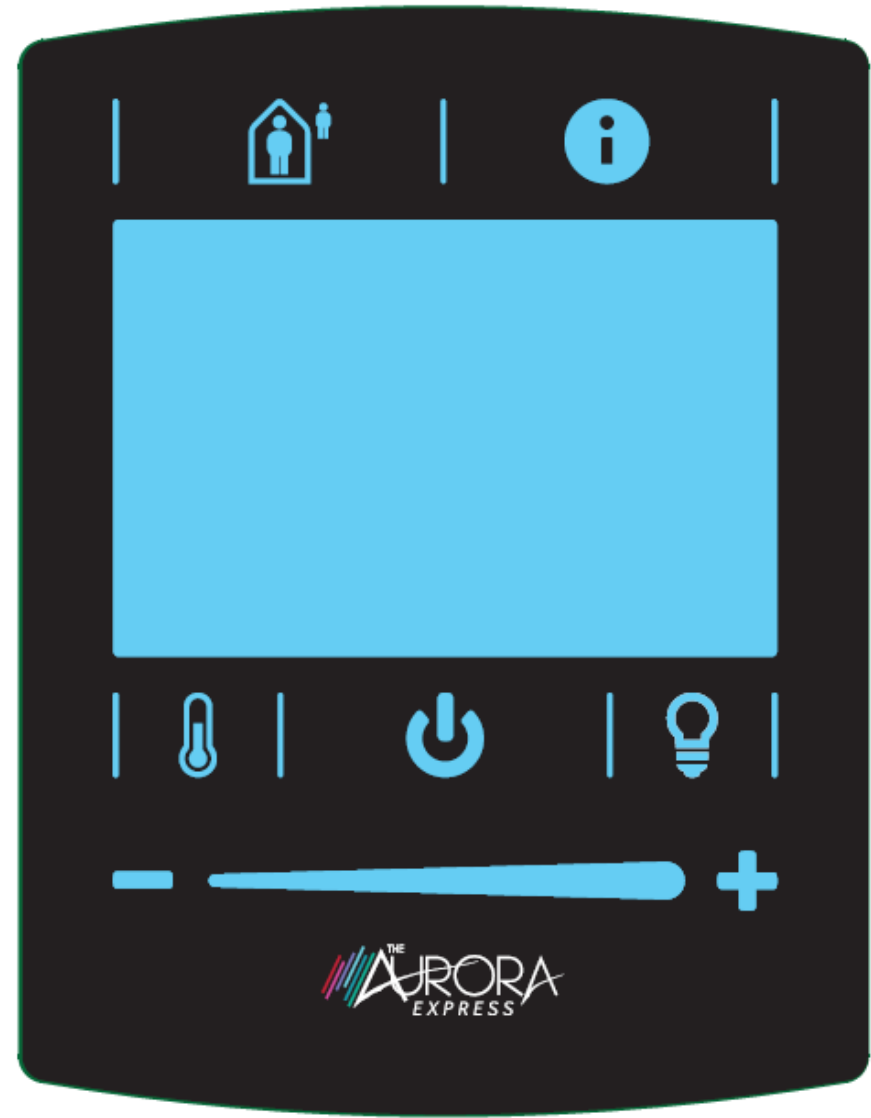
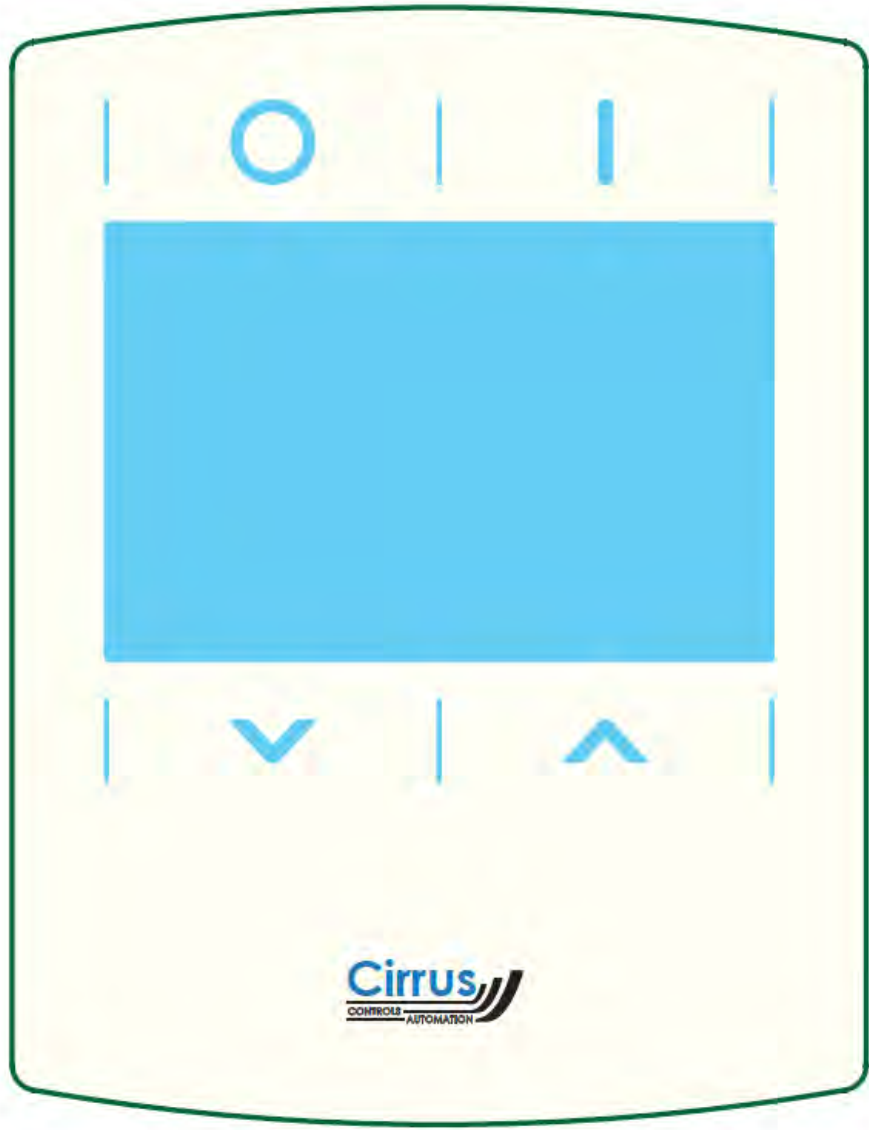


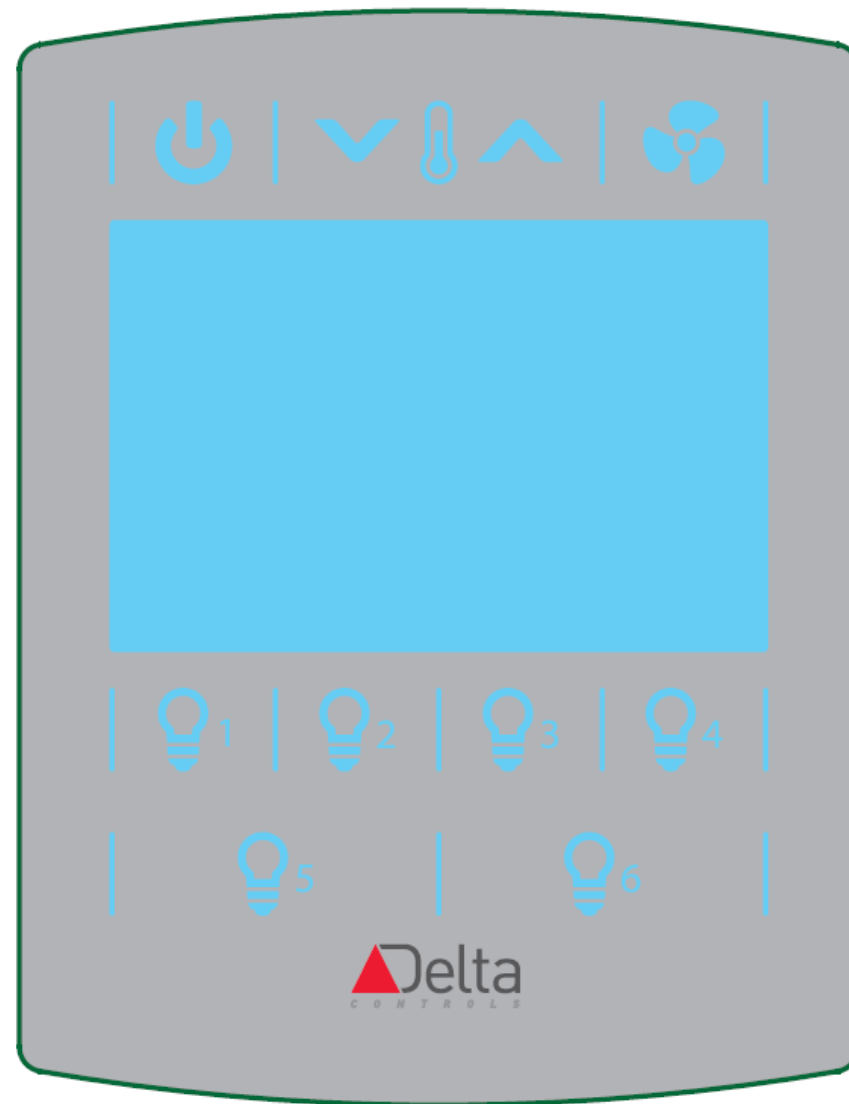
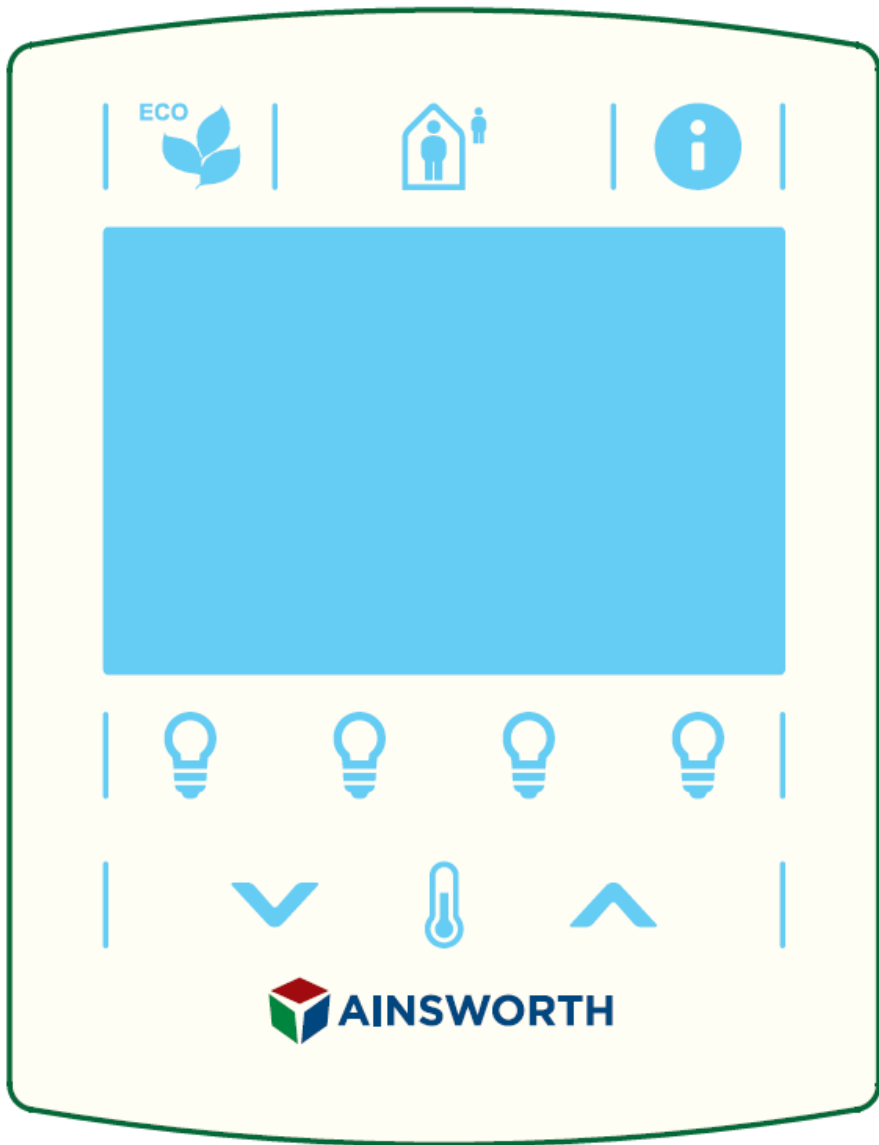
- 1 Price (initial cost) per customization
- Unlimited order #
- Remains in Delta stock for future

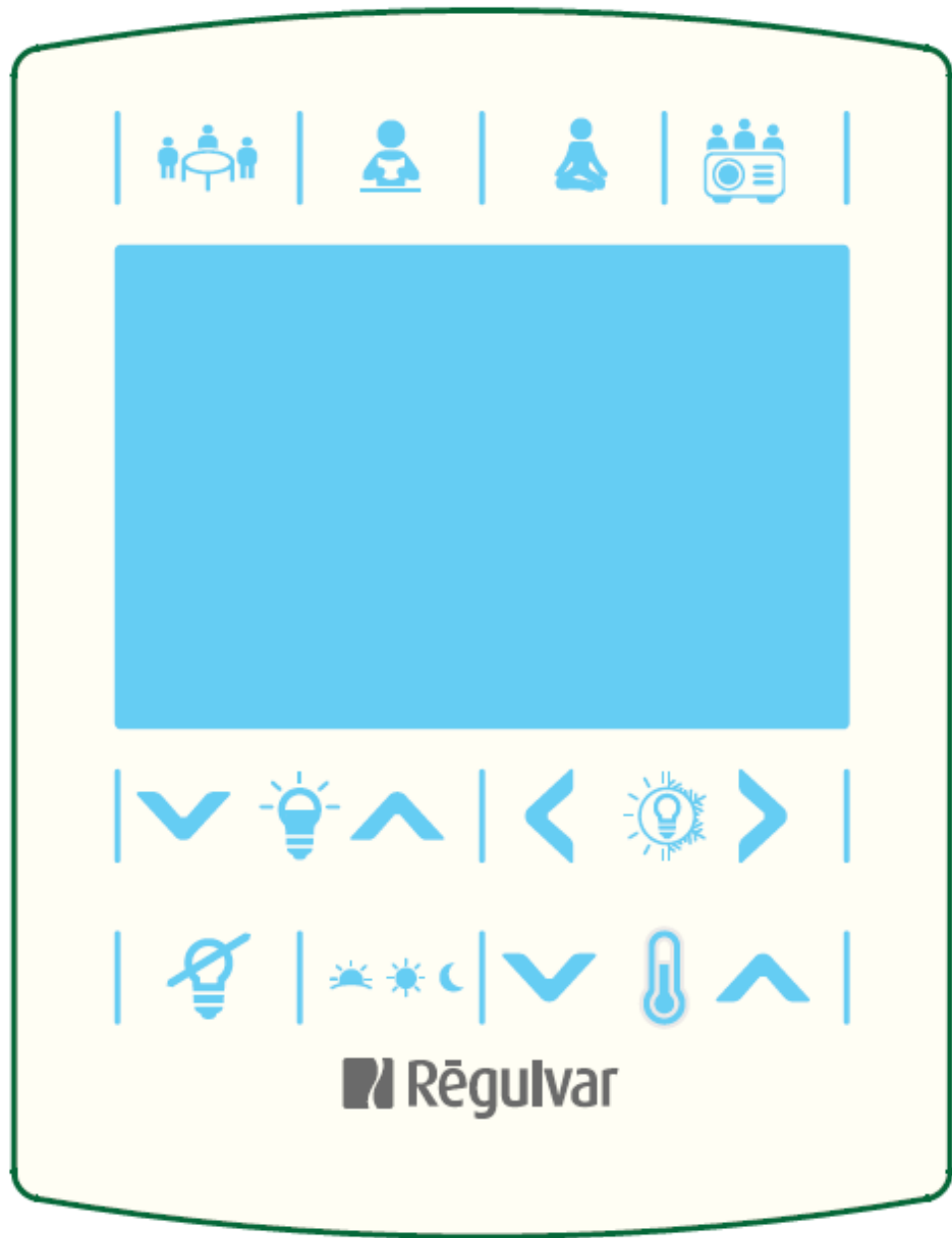


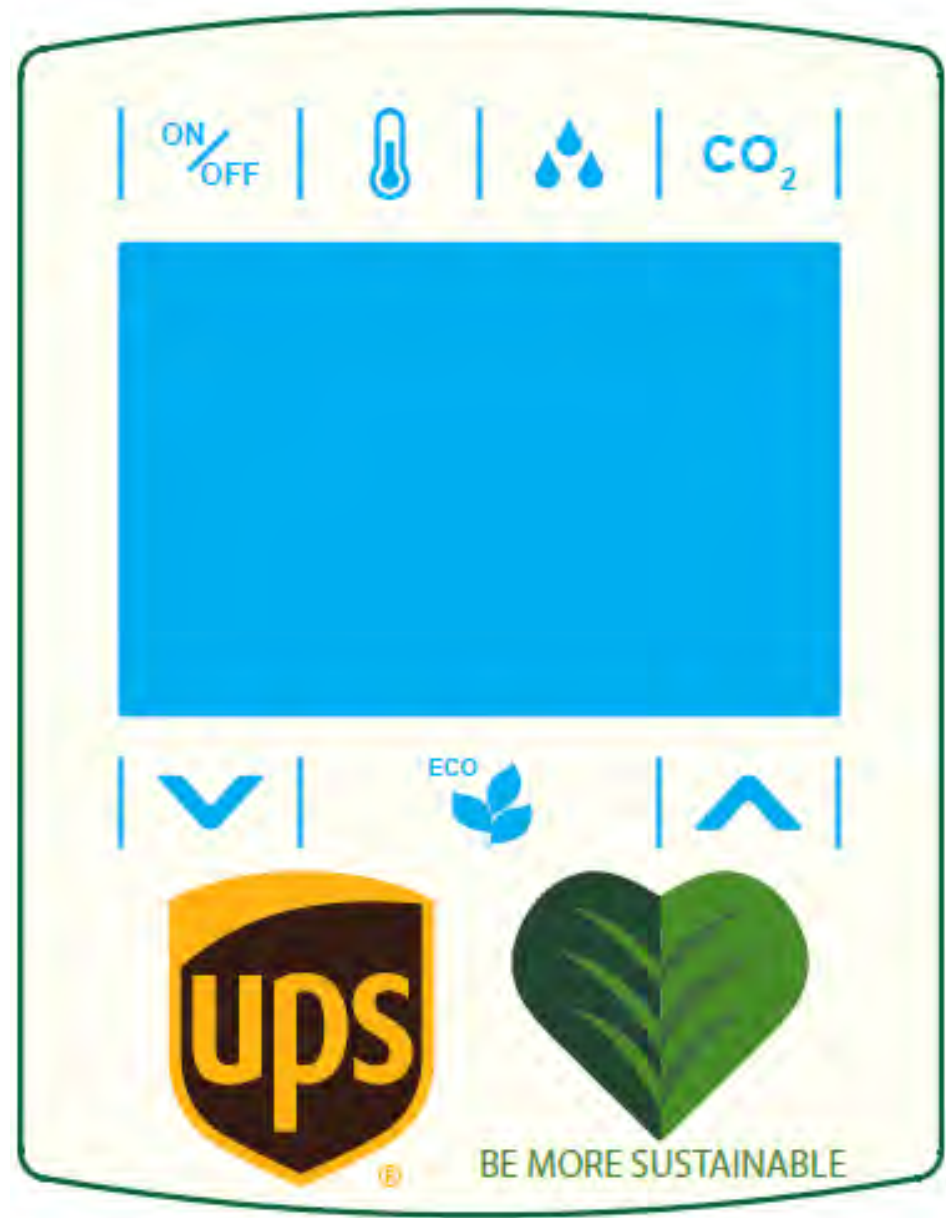


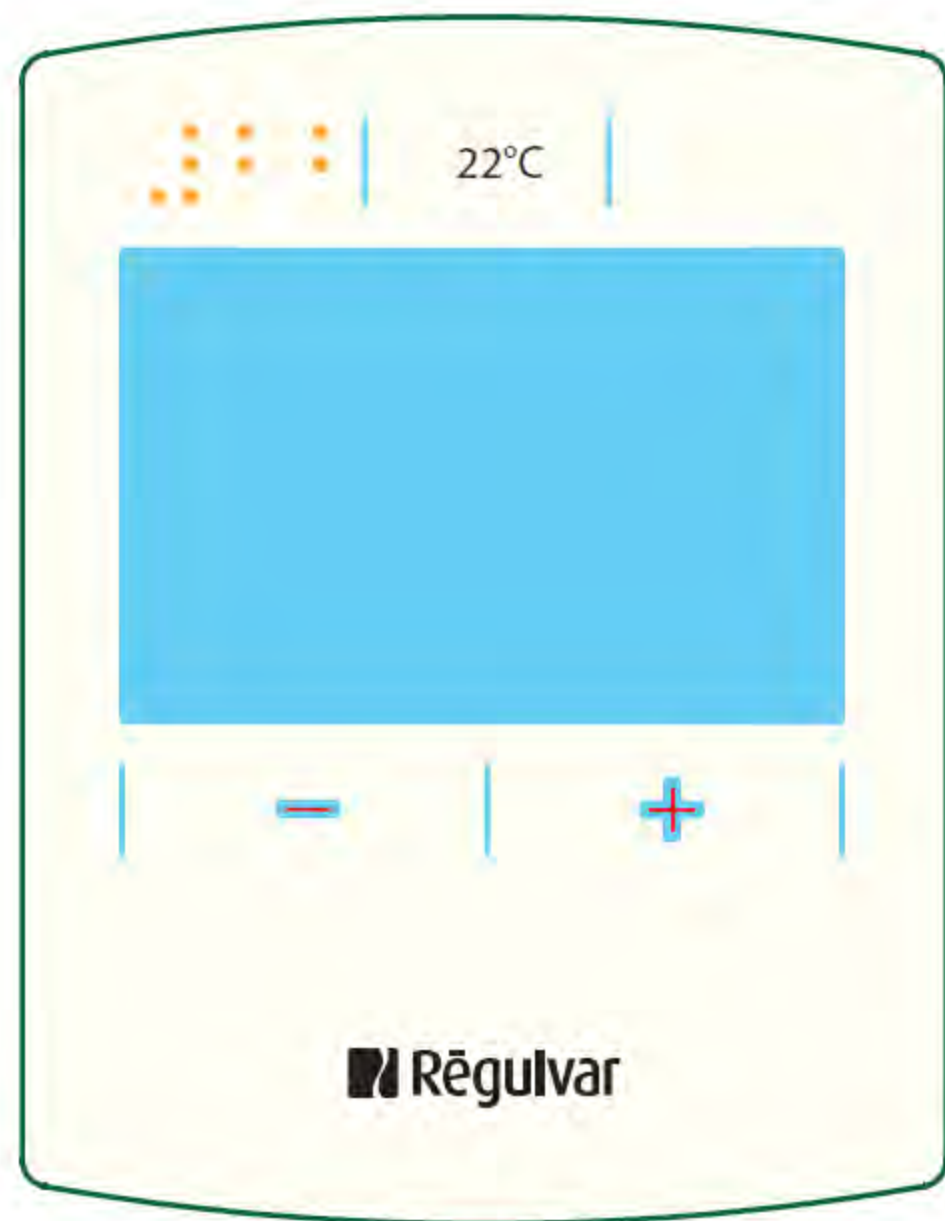
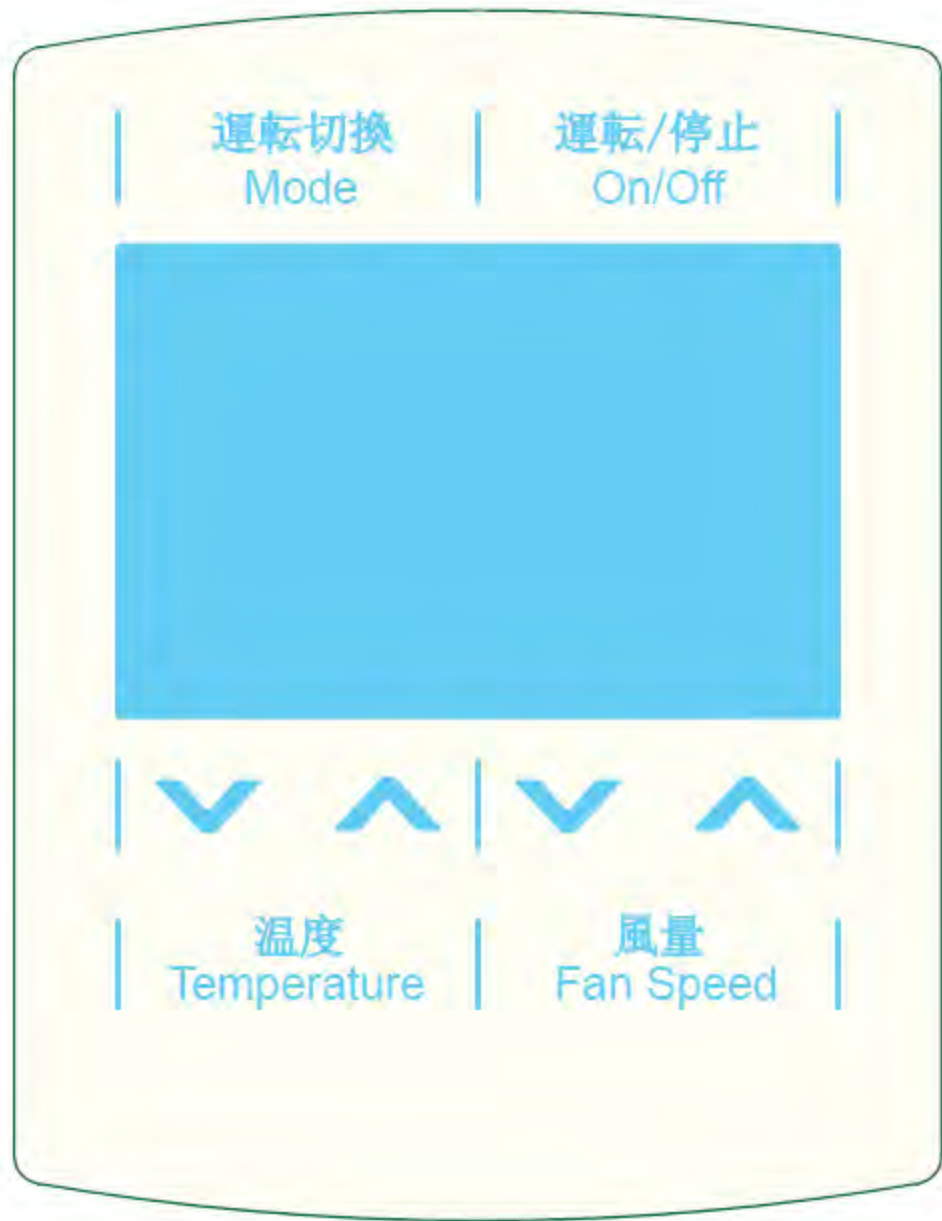














Project Background

Power Engineering Solutions (PES), a trusted Delta Controls Partner, was asked to modernize the graphics interface for a Hyatt hotel operating on Delta's legacy graphics platform. Rather than take on the technical lift in-house, PES turned to Delta Controls' Professional Development Services (PDS) Graphics Division to execute the upgrade on their behalf.

This approach allowed PES to preserve their direct relationship with the customer while delivering a high-quality result backed by the Delta Controls brand. From the client's perspective, PES provided a seamless, professional experience along with the desired modernized graphics solution.



Objectives

- Replace outdated OrcaView graphics with intuitive enteliVIZ screens.
- Eliminate the need for client-side software by shifting to web-based graphics through enteliWEB.
- Preserve all critical system behaviors, including data points, alarms, and navigation logic.
- Minimize disruption by performing a live, behind-the-scenes transition.
- Maintain partner visibility by enabling PES to remain the primary point of contact.

Execution Strategy

Delta PDS handled the technical piece of the project from start to finish using secure remote access and the site's original project files to rebuild all graphics in enteliVIZ. The PDS team leveraged its vast and vetted internal graphic template library to efficiently replicate the functionality of the original system while improving visual clarity and responsiveness.

All design, testing, and validation were completed without disrupting hotel operations. This remote workflow ensured both speed and system stability, delivering a polished result without burdening the partner or the client.

Graphics Before



Home Page ORCAView



Floor Plan 1 ORCAView



Chiller Plant ORCAView



Air Handling Unit ORCAView

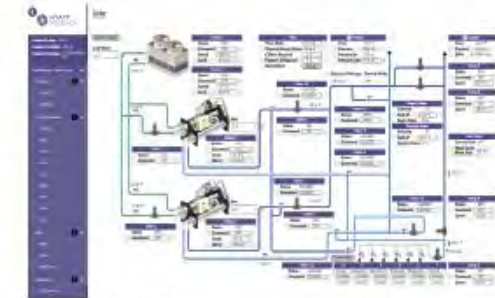
Graphics After



Home Page enteliVIZ



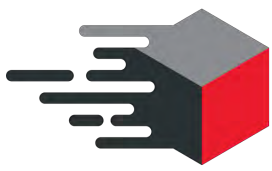
Floor Plan 1 enteliVIZ



Chiller Plant enteliVIZ





Air Handling Unit enteliVIZ



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Graphics Example – Branded Homepage

  HYATT
REGENCY

Outside Air Temp: 54.8 °F
Outside Air Humidity: 64.4 %
Outside Air Enthalpy: 19.5 BTU/lb (dry air)

Hyatt Regency - Garden Grove ▾

- Floorplans 2 >
- Airflow Equipment 9 >
- Plant 3 >
- Summaries 2 >



 HYATT
REGENCY

11999 Harbor Blvd
Garden Grove, CA
92840



Graphics Example – Branded Heatmap Floorplan



Floorplan - 1st Floor

Outside Air Temp: 54.9 °F
 Outside Air Humidity: 63.6 %
 Outside Air Enthalpy: 19.4 BTU/lb (dry air)

Hyatt Regency - Garden Grove

Floorplans **2**

1st Floor

2nd Floor

Airflow Equipment **9**

Plant **3**

Summaries **2**



Garden Rooms	
Garden 1	Schedule 1
Garden 2	Schedule 1
Garden 3	Schedule 1
Garden 4	Schedule 4

Display

VAVs Room Names

Legend

- Above Range ■
- In Setpoint Range ■
- Below Range ■



Graphics Example – Branded 3D AHU



AHU 1 - Second Floor West

Outside Air Temp: 54.8 °F
Outside Air Humidity: 63.9 %
Outside Air Enthalpy: 19.5 BTU/lb (dry air)

- Hyatt Regency - Garden Grove
- Floorplans 2
- Airflow Equipment 9
- Overview
- AHU 1
- AHU 2
- AHU 3
- AHU 4
- AHU 6
- AHU 7
- MAU 1
- 5F 18
- Plant 3
- Summaries 2

Outside Air Damper
Status: 0.0 %
Command: 30.0 %

Return Air Damper
Status: 0.0 %
Command: NULL

Return Air
Temperature: 72.0 °F
Humidity: 50.0 %

Supply Fan
Status: ON
Command: ON
Fan Speed: 81.8 %
Econ. Enable: OFF

Chilled Water Command
0.0 %

Supply Air Humidity
1.2 inWC

Supply Air Temp
62.6 °F

Additional Information

AHU Required	ON
Economizer Mode	Open
AHU Schedule	
AHU Multi-Trend	

Setpoints

Supply Static SP	1.2 inWC
Return Temp	67.0 °F
Calculated Supply	64.0 °F
Supply Air Min.	64.0 °F
Supply Air Max.	66.0 °F



BRF

Biomedical Research Facility

23.0 °C 48.3 %RH 16.0 °C (WB)

Alarm Reset

- Floorplans
 - Floor 0
 - Floor 1
 - Floor 2
 - Floor 3
 - Floor 4
- Hydronics
 - Chilled Glycol System
 - Heated Glycol System - High Temp
 - Heated Glycol System - Low Temp
 - Steam Humidification System
- Airflow Equipment
 - AHU-101/102
 - AHU-103/104
 - HRU-001/002
 - HRU-003/004
 - EF-005/006
- Miscellaneous
 - Aircuity System
 - Sump Pumps
 - Power Monitoring

CHILLED GLYCOL SYSTEM

CHILLER 301-500 STATUS

Start/Stop	Stop
Running Mode	Chiller Off
Mode Command	Cooling
CCT1 Status	0.0
CCT2 Status	0.0
Running Capacity	0 %

CHILLER 302-500 STATUS

Start/Stop	Stop
Running Mode	Chiller Off
Mode Command	Cooling
CCT1 Status	0.0
CCT2 Status	0.0
Running Capacity	0 %

HRU - HEAT RECOVERY COILS

HRU	Status	Valve (%)	CG ΔT (°C)	Air ΔT (°C)	Energy (kBtu/h)
001	On	100	-1.6	-4.9	60
002	On	100	-1.7	-4.2	51
003	On	100	-1.6	-4.6	55
004	On	100	-1.3	-3.9	48

AHU - HEAT RECOVERY COILS

AHU	Status	Valve (%)	CG ΔT (°C)	Air ΔT (°C)	Energy (kBtu/h)
101	On	100	-15.7	-4.0	86
102	On	100	-10.9	-4.4	92
103	On	100	-11.2	-4.5	102
104	On	100	-7.9	-4.5	90

AHU - HEATING/COOLING COILS

AHU	Status	Valve (%)	CG ΔT (°C)	Air ΔT (°C)	Energy (kBtu/h)
101	On	0	3.4	-0.3	7
102	On	0	6.8	1.0	20
103	On	0	4.8	0.2	4
104	On	0	6.9	0.2	5

COOLING - DP'S

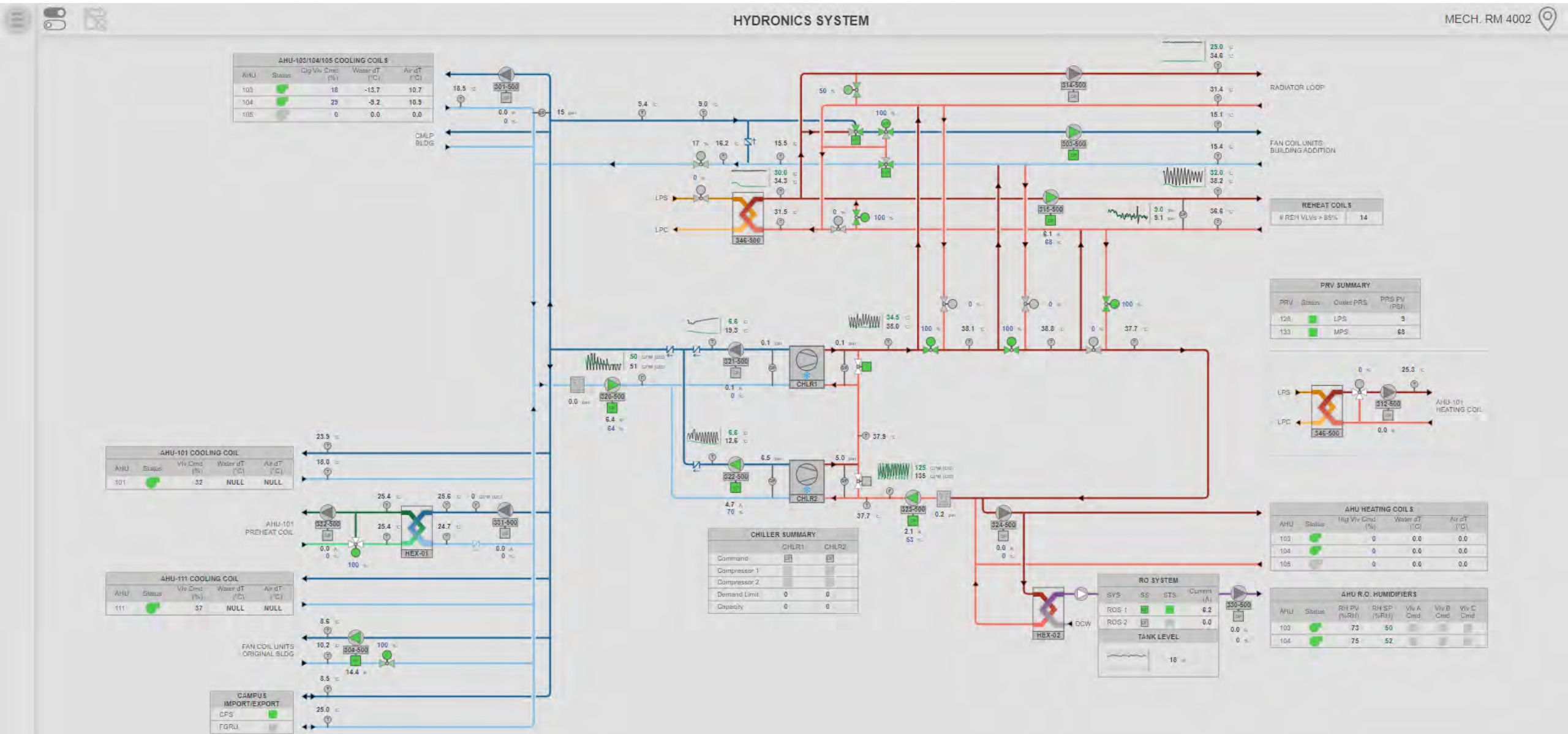
Floor	DP (psi)
1	10
2	10

ENERGY SUMMARY

Description	Energy (kBtu/h)	ΔT (°C)
Heat Recovery Chillers	55	-0.3

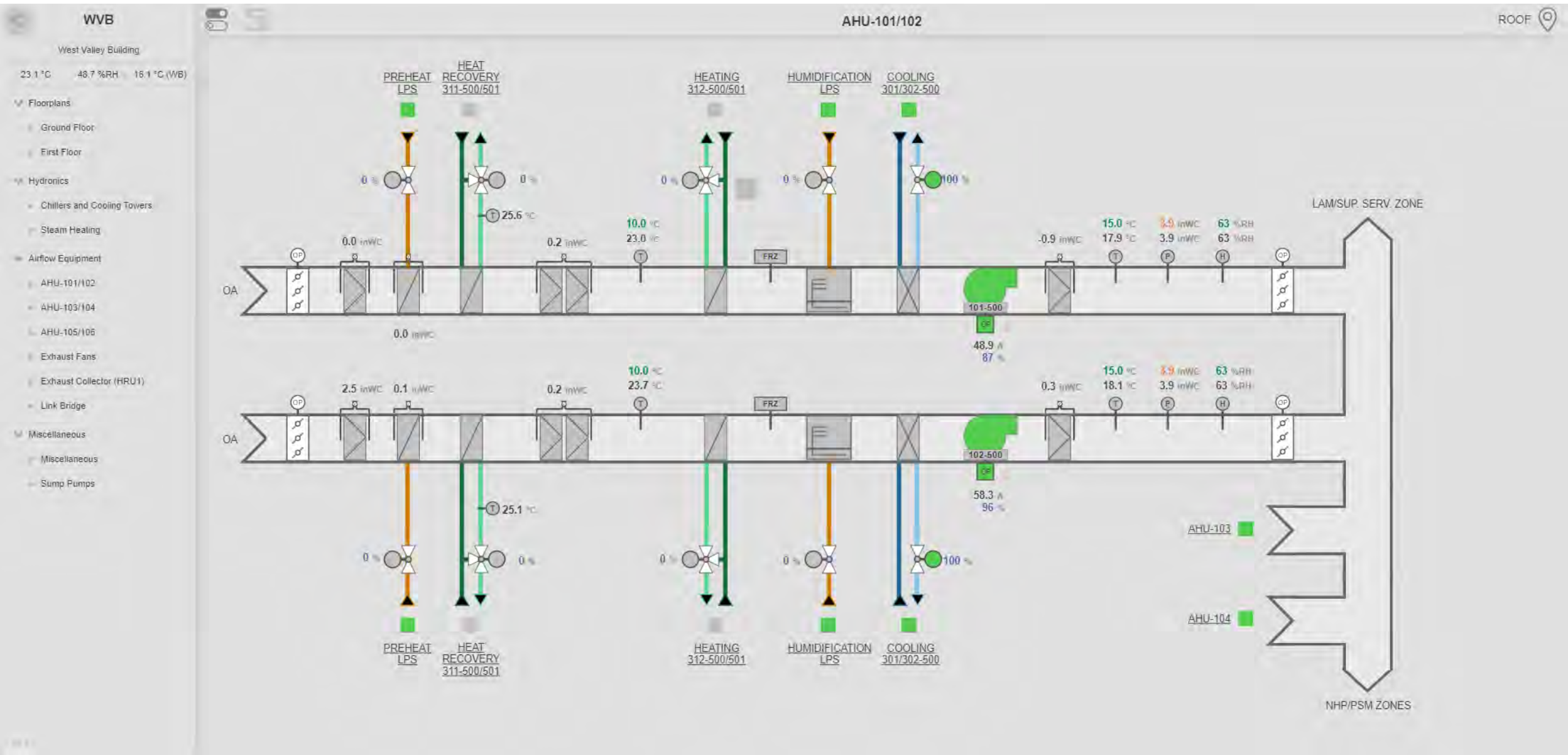


Graphics Example – 2D Color-Coded Hydronic





Graphics Example – 2D AHU



End-User Apps...

Customer: Can you (PDS) build us an end-user App?

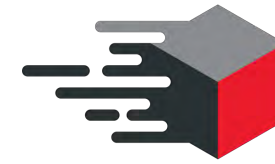
PDS: Yes, but... it'll cost \$100k+. Triple that for iOS.

Customer: Oh...

PDS: But, if you need something for end-customers, ***we may have another way....***



App that is not an App...



Professional
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Services

TELUS 5G+ 9:53 AM 94%

Unit	Temp	Setpoint	Mode
AH-1	71.4 °F	71.0 °F	Unoccupied
AH-3	71.3 °F	73.0 °F	Occupied
AH-4	69.7 °F	70.5 °F	Occupied
AH-5	64.1 °F	72.5 °F	Unoccupied

STASIS ENERGY GROUP

rgygroup.entelicloud.com

TELUS 5G+ 9:53 AM 94%

71.4 °F

71 °F

Unoccupied
Re-enable System

AH-1

Demo STASIS ENERGY GROUP

rgygroup.entelicloud.com

TELUS 5G+ 9:53 AM 94%

69.7 °F

70.5 °F

Occupied
Disable for today

AH-4

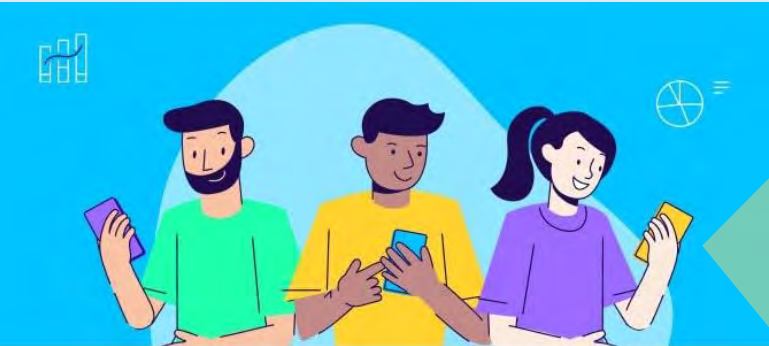
Demo STASIS ENERGY GROUP

rgygroup.entelicloud.com

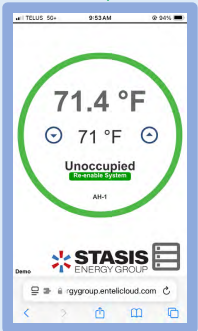
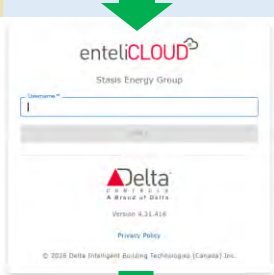
App that is not an App...



Professional Development Services



<https://customer.enteliCLOUD.com>





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 deltacontrols.com
 +18045749444

PDS Engineering Case Study



Introduction

When a new controls partner needed help fast, Delta Controls' Professional Development Services (PDS) team stepped in with full-service support. The El Paso Water Utilities (EPWU) administrative building project is a new construction effort led by Trane, a mechanical systems provider and newly onboarded Delta Controls partner.

With limited prior experience working with Delta products, Trane required comprehensive assistance to meet the demands of a rigorous spec and schedule-driven project. With over 100 VAVs, four AHUs, and complex compliance requirements, Delta Controls' PDS division delivery of engineering services, programming, graphics, and documentation services—ensuring project success while enabling Trane to self-perform and scale their Delta capabilities.



Partner Enablement and Project Scope

EPWU's new ~29,800 sq. ft. three-story administrative headquarters is part of a broader site development that includes a 28,200 sq. ft. elevated parking deck, a generator pad, and a stormwater detention pond. Originally bid with Trane's proprietary control system, the end user opted late in the process to pursue a Delta Controls-based solution. Trane, as a new Delta partner with limited familiarity, engaged PDS for a turnkey controls implementation.

The scope of controls integration focuses on the administrative office building, with a complete Delta Controls enteliWEB-based building automation solution.

Technical Services Delivered

This project represents a comprehensive engagement from PDS across multiple verticals:

- **Engineering:** Development of controls drawings, submittals, specification compliance review, and support for future as-builts.
- **Programming:** Delivery of programming for all equipment, including four AHUs and several hundred VAVs, ensuring performance.
- **Compliance Review:** Provision of a line-by-line controls compliance analysis as a standalone, billable service to ensure specification adherence.
- **Graphics:** Development of graphics by PDS to support enteliWEB visualization and operational readiness.
- **Software Features:** Providing supplemental enteliWEB modules for alarm escalation functionality.

Compliance Review

A unique aspect of this project is the performance of a specification compliance review service of the controls specification to ensure adherence. This includes a line-by-line review of the Building Management System section of the construction specification, noting each line item as one of Comply, Comply with Deviations, or Exception—with accompanying documentation to support reasoning. This ensures delivery of a high-quality solution that met or exceeded design intent, while staying within budget using well-matched components with a proven track record of compatible performance with Delta Controls.

Collaboration and Turnover

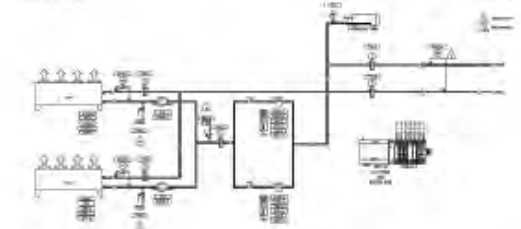
Though Trane owns the site-wide construction, controls and mechanical scope, Delta PDS remains directly engaged through each milestone. Initial design meetings were held weekly; and currently, the project is in the programming phase, with touchpoints occurring as needed. Additionally, PDS training was delivered in a limited onboarding format, with the intent that Trane will self-perform commissioning and support.

PDS maintains a 30-day warranty period post-turnover, with a 10-day formal review window for deliverable verification. The structure of the engagement ensures the partner can retain full site control post-handover without ongoing dependence on Delta, while still having support.

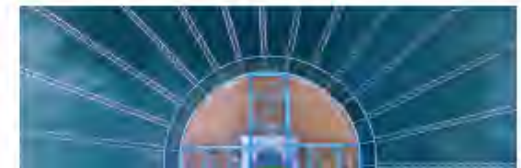
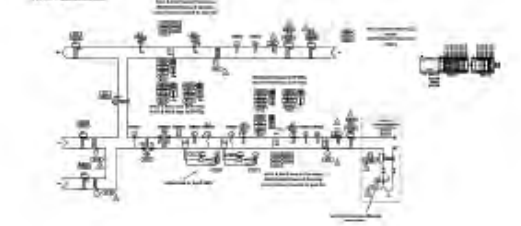
Conclusion

The El Paso Water Utilities project stands as a model for how Delta Controls enables new partners through the PDS framework. Delta's focus remains on delivering quality installations, robust engineering support, and scalable partner enablement. Whether Trane continues to self-perform or returns for future services, Delta lays the foundation for success—with a fully engineered, spec-compliant, and future-ready Delta Controls system.

DHWS FLOW



VAV AHU FLOW
 Typical of a
 System 20000.000



Engineering Compliance Review

Marked up specification:

Compliance Review Legend
C = Comply with No Exceptions
D = Comply with Deviations. See note.
E = Exception, do not comply. See note.

El Paso Water Administration Building
El Paso, Texas

SECTION 23 09 00

BUILDING MANAGEMENT SYSTEM

PART 1 - GENERAL

1.01 CONDITIONS & REQUIREMENTS

- C A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.
- C B. All work shall comply with the requirements of the Conditions of the Contract (General and Special), with the Contract Drawings, and with all other contract documents.
- C C. Any deviations from the requirements of the Contract Documents must be submitted in writing along with bid documents.

1.02 RELATED DOCUMENTS

- C A. In case there is a discrepancy between this specification and Division 21, Division 22, Division 23, Division 26 and Division 28 specifications and their associated drawings, then the Bidder shall assume the more stringent requirement for his bid.

Supplemental Reasoning for Deviations – with Engineer Acceptance Notes

Acceptable 2.05.G

Panel output modules have hardware override switches. Hardware override switches will not operate if the controller loses power. CHWS, HWS and AHU Panels will be provided with UPS backup as per 2.05.A.

Acceptable 2.09.D

OWS is provided without enteliWEB software license. enteliWEB will installed on server and is a web application and can be accessed anywhere on the network with a browser. The workstation computer can pull up all system functionality through a supported web browser without the need of additional software.

Acceptable 2.13.A.4

Mouse will be required to navigate through graphics. Other parts of the software may be navigated through keyboard or mouse or both.

Acceptable 2.13.A.5

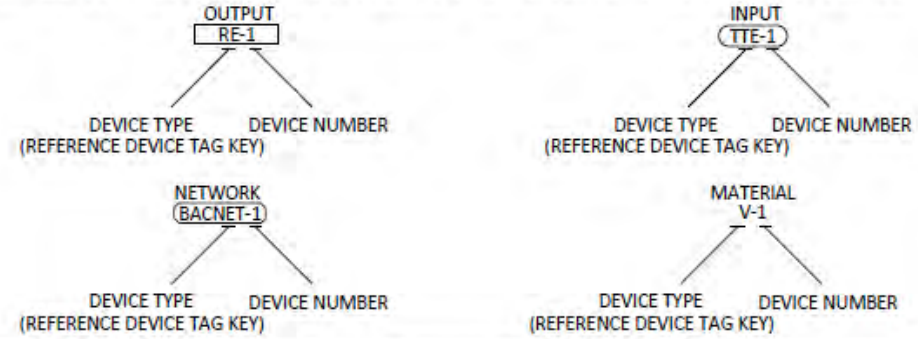
Some parts of the software are drag and drop. The functionality listed in this spec item can be achieved by opening multiple browser tabs to view several items at once. Typing in links and references will offer suggestions and autocomplete to facilitate ease of use.

Shop Drawing Examples

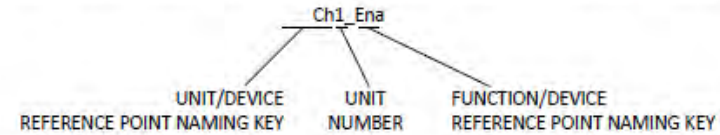
DEVICE TAG KEY			
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AE	ACTUATOR ELECTRIC	HZ	HERTZ
AFS	AIRFLOW STATION	GR	(GEOTHERMAL) GROUND RETURN
AI	ANALOG INPUT	GS	(GEOTHERMAL) GROUND SUPPLY
ALM	ALARM	IAQ	INDOOR AIR QUALITY
AMP	AMP INPUT	KW	KILOWATTS
ATL	ANALOG TO RELAY SEQUENCER	KWH	KILOWATT HOURS
AO	ANALOG OUTPUT	KWM	ELECTRIC KILOWATT METER
BACNET	BACNET PROTOCOL INTERFACE	LLS	LIQUID LEVEL SWITCH
BAAC	BACNET ADVANCED APPLICATION CONTROLLER	LLT	LIQUID LEVEL TRANS.
BASC	BACNET APPLICATION SPECIFIC CONTROLLER	LTDE	LOW TEMPERATURE DETECTOR ELECTRIC
BAWS	BACNET ADVANCED OPERATOR WORKSTATION	LTG	LIGHTING CONTACTOR
BBC	BACNET BUILDING CONTROLLER	OAQ	OUTDOOR AIR QUALITY
BOWS	BACNET OPERATOR WORKSTATION	PB	PUSH BUTTON
BSA	BACNET SMART ACTUATOR	PCHWP	PRIMARY CHILLED WATER PUMP
BSS	BACNET SMART SENSOR	PCHWR	PRIMARY CHILLED WATER RETURN
BI	BINARY INPUT	PCHWS	PRIMARY CHILLED WATER SUPPLY
BLR	BOILER	PE	PRESSURE ELECTRIC SWITCH
BO	BINARY OUTPUT	PHWP	PRIMARY HOT WATER PUMP
BTU	BRITISH THERMAL UNIT	PHWR	PRIMARY HOT WATER RETURN
CB	CIRCUIT BREAKER	PHWS	PRIMARY HOT WATER SUPPLY
CBL	CABLES	PL	PILOT LIGHT
CHLR	CHILLER	PNL	CONTROL PANEL
CHWP	CHILLED WATER PUMP	POINT	BACNET/LON/MODBUS SOFTWARE POINT
CHWR	CHILLED WATER RETURN	PS	AUX. POWER SUPPLY
CHWS	CHILLED WATER SUPPLY	PSI	POUNDS PER SQUARE INCH
CLG	COOLING STAGES	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
CMP	COMPRESSOR	PSIG	POUNDS PER SQUARE INCH GAUGE
CP	CIRCULATION PUMP	PST	PULL STATION
CS	CURRENT SWITCH	PTE	PRESSURE TRANSMITTER ELECTRIC
CT	COOLING TOWER/CURRENT TRANSDUCER	PTR	PRINTER
CWP	CONDENSER WATER PUMP	RE	RELAY ELECTRIC
CWR	CONDENSER WATER RETURN	REV	REVERSING VALVE
CWS	CONDENSER WATER SUPPLY	RLF	RELIEF
D	DAMPER	RP	RECIRCULATING PUMP
DDC	DISTRIBUTED DIGITAL CONTROL	RPM	ROOM PRESSURE MONITOR
DPS	DIFFERENTIAL PRESSURE SWITCH	RTR	ROUTER
DPTE	DIFFERENTIAL PRESSURE TRANSMITTER ELECTRIC	SCHWP	SECONDARY CHILLED WATER PUMP
DS	ELECTRICAL DISCONNECT	SCHWR	SECONDARY CHILLED WATER RETURN
EBX	EXPANSION BOARD	SCHWS	SECONDARY CHILLED WATER SUPPLY
EDH	ELECTRIC DUCT HEATER	SCR	SILICON CONTROLLED RECTIFIER
ES	END SWITCH	SHWP	SECONDARY HOT WATER PUMP
ET	ENTHALPY TRANSMITTER	SHWR	SECONDARY HOT WATER RETURN
FA	FIRE ALARM	SHWS	SECONDARY HOT WATER SUPPLY
FAN	FAN, SUPPLY FAN	SD	SMOKE DETECTOR / SMOKE DAMPER
FAS	FIRE ALARM SYSTEM	SPD	FAN SPEED
FB	FUSE BLOCK	SPP	STATIC PRESSURE PROBE
FC	FLUID COOLER	STR	STARTER
FDBK	DEVICE FEEDBACK	STS	STATUS
FM	FLOW MTR. (FLOW METER STATION)	SWTCH	NETWORK SWITCH
FS	FLOAT SWITCH	TB	TERMINAL BLOCK
GD	GAS DETECTOR	TD	TEMPERATURE DIFFERENCE / TIME DELAY
HEX	HEAT EXCHANGER	TDR	TIME DELAY RELAY
HCR	(2-PIPE) HEAT/COOL RETURN	TRM	TERMINATOR
HCS	(2-PIPE) HEAT/COOL SUPPLY	TTE	TEMPERATURE TRANSMITTER ELECTRIC
HQA	HAND-OFF-AUTO SWITCH	UMX	ANALOG TO RELAY SEQUENCER
HTE	HUMIDITY TRANSMITTER ELECTRIC	UV	ULTRA-VIOLET / UNIT VENTILATOR
HTG	HEATING STAGES	V	VALVE
HWP	HOT WATER PUMP	VFD	VARIABLE FREQUENCY DRIVE
HWR	HOT WATER RETURN	WWHP	WATER TO WATER HEAT EXCHANGER & HEAT PUMP
HWS	HOT WATER SUPPLY	XFMR	TRANSFORMER

NAMING STRUCTURE PROCESS FLOW

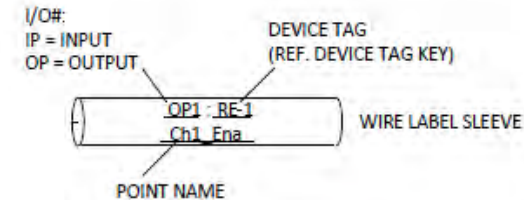
DEVICE TAGS ARE ABBREVIATIONS USED TO CORRELATE AN OBJECT ON THE FLOW DIAGRAM TO A POINT ON THE CONTROLLER I/O WIRING DIAGRAM. THE SHAPE SURROUNDING THE ABBREVIATION DENOTES ITS I/O FUNCTION.



POINT NAMES ARE ABBREVIATIONS USED TO CORRELATE A POINT ON A CONTROLLER I/O WIRING DIAGRAM TO A SOFTWARE POINT IN THE PROGRAM. POINT NAMES ALSO SERVE AS A MORE DESCRIPTIVE DEFINITION TO DEVICE TAGS.

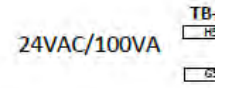


WIRE LABELS IN THIS EXAMPLE, THE FIRST RELAY ON THE FLOW DIAGRAM IS IDENTIFIED AS RE-1 AND IS OUTPUT ONE ON THE CONTROLLER. THIS IDENTIFICATION CAN BE FOUND ON THE WIRE TAG ON THE CONTROLLER I/O WIRING PAGE. THE WIRE TAG WILL ALSO CONTAIN THE POINT NAME THAT IDENTIFIES THE PURPOSE/FUNCTION OF THE POINT.

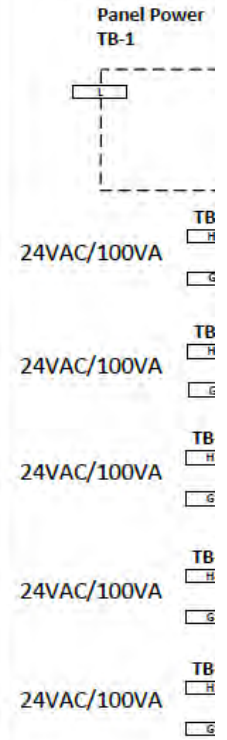
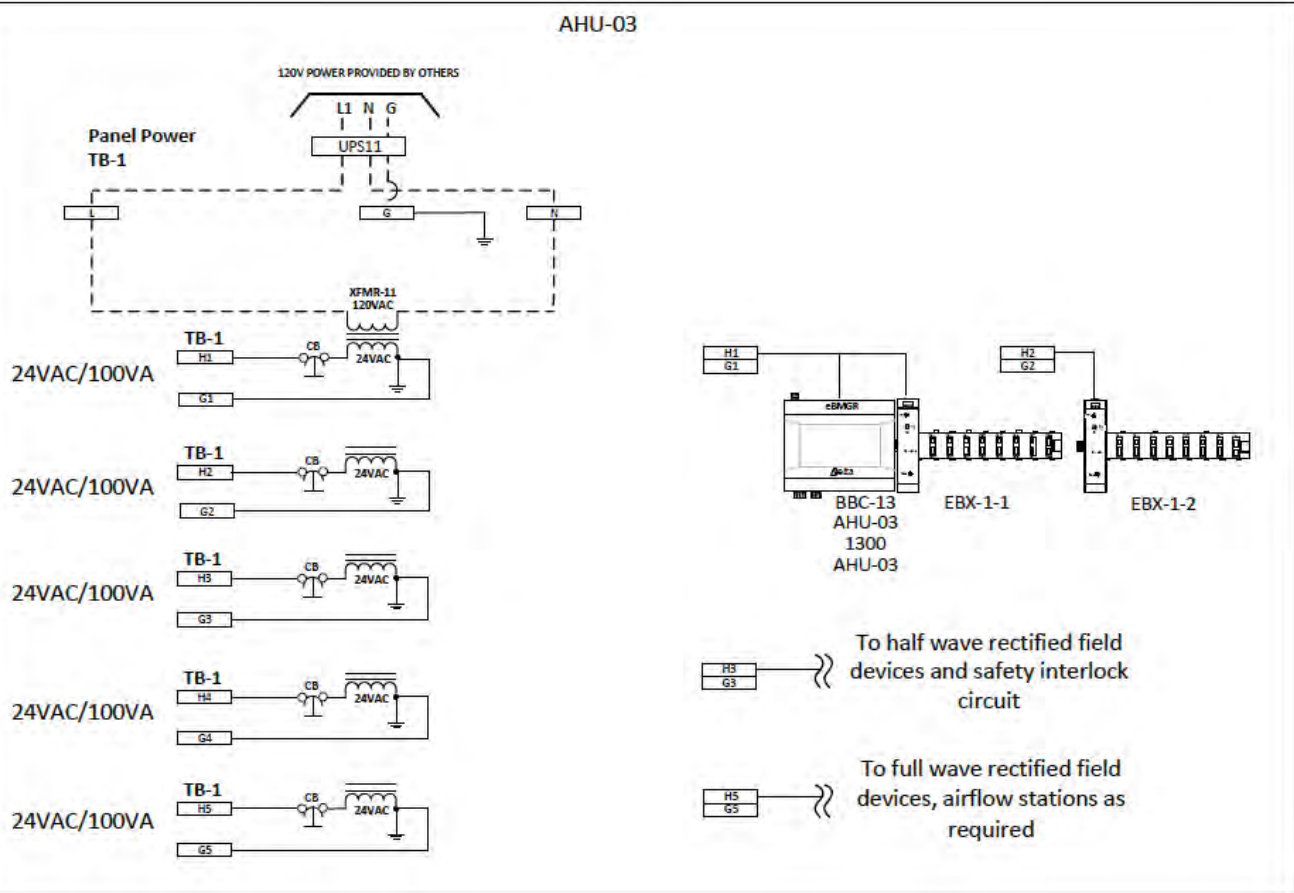


Shop Drawing Examples

powered 4-
devices

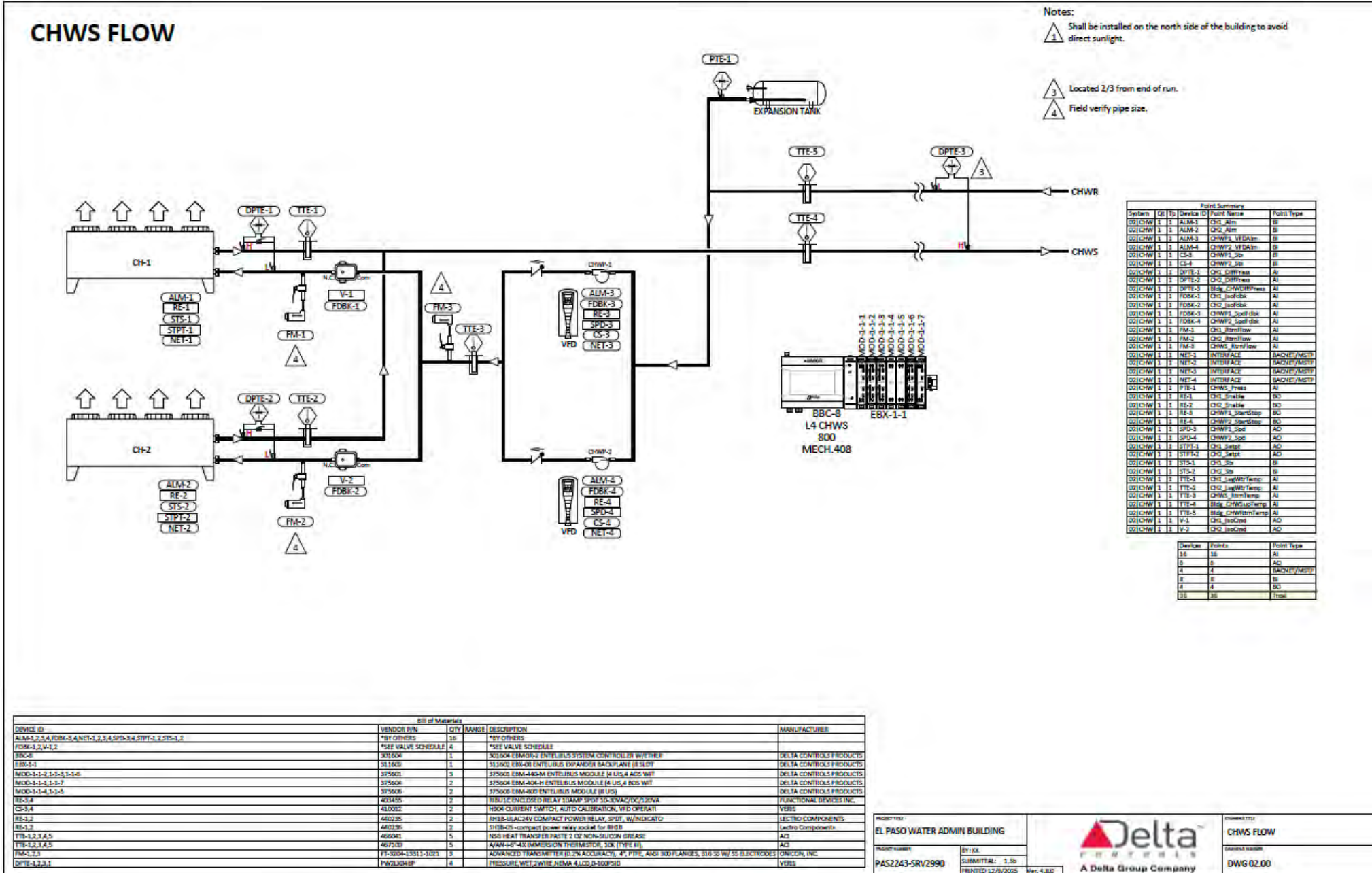


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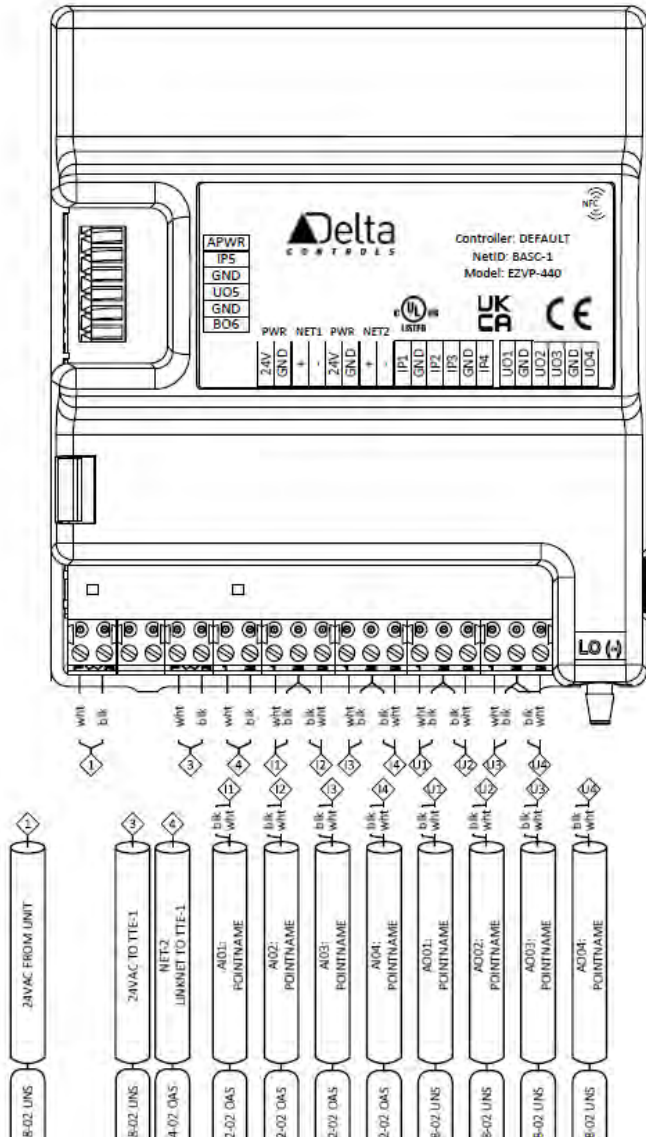


powered 4-
devices

Shop Drawing Examples



Shop Drawing Examples



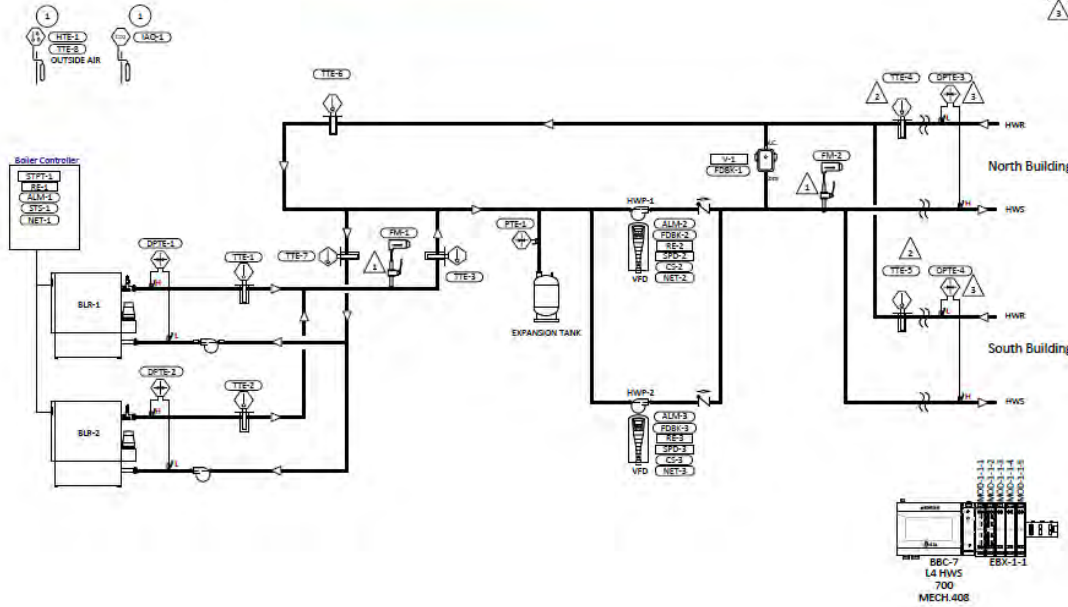
DAMPER SCHEDULE

System	Tag	Description	Damper								Actuator					
			Dimensio in (WxH)	Flow Desi CFM	Flow Min	Pressure (Max Close Press. in H2O	Max Torq in-lbs	Voltage	Torque in-lbs	Signal	2-10V/Enc	Power Los	Signal Los	Model	Manufacturer	
AHU-1	AE-1	Outside Air Damper 1	26x94	15425		0.13		115	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-1	AE-2	Outside Air Damper 2	26x94	15425		0.13		115	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-1	AE-3	Mix Air Damper	88x72	30850		0.066		303	24VAC	360	2-10V	2-10V	FO	NO	GKX24-SR-TN4	Belimo
AHU-1	AE-4	Exhaust Air Damper	30x104	30850		0.2		160	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-1	AE-5	Return Air Iso Damper	26x85	30850		0.2		107	24VAC	270	24VAC	EndSw	FC	NC	EFX24-S N4	Belimo
AHU-1	AE-6	Return Air Fire Damper	??	30850		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-1	AE-7	Supply Air Iso Damper	42x93	30850		0.06		188	24VAC	270	24VAC	EndSw	FO	NC	EFX24-S N4	Belimo
AHU-1	AE-8	Supply Air Fire Damper	??	61700		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-2	AE-1	Outside Air Damper 1	26x94	15425		0.13		115	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-2	AE-2	Outside Air Damper 2	26x94	15425		0.13		115	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-2	AE-3	Mix Air Damper	88x72	30850		0.066		303	24VAC	360	2-10V	2-10V	FO	NO	GKX24-SR-TN4	Belimo
AHU-2	AE-4	Exhaust Air Damper	30x104	30850		0.2		160	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-2	AE-5	Return Air Iso Damper	26x85	30850		0.2		107	24VAC	270	24VAC	EndSw	FC	NC	EFX24-S N4	Belimo
AHU-2	AE-6	Return Air Fire Damper	??	??		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-2	AE-7	Supply Air Iso Damper	42x93	30850		0.06		188	24VAC	270	24VAC	EndSw	FO	NC	EFX24-S N4	Belimo
AHU-2	AE-8	Supply Air Fire Damper	??	??		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-3	AE-1	Outside Air Damper 1	24x60	7890		0.126		66	24VAC	180	2-10V	2-10V	FC	NC	AFX24-SR N4	Belimo
AHU-3	AE-2	Outside Air Damper 2	24x60	7890		0.126		66	24VAC	180	2-10V	2-10V	FC	NC	AFX24-SR N4	Belimo
AHU-3	AE-3	Mix Air Damper	63x58	15780		0.057		174	24VAC	270	2-10V	2-10V	FO	NO	EFX24-SR N4	Belimo
AHU-3	AE-4	Exhaust Air Damper	79x26	15780		0.13		99	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-3	AE-5	Return Air Iso Damper	24x61	15780		0.14		70	24VAC	270	24VAC	EndSw	FC	NC	EFX24-S N4	Belimo
AHU-3	AE-6	Return Air Fire Damper	??	??		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-3	AE-7	Supply Air Iso Damper	24x66	15780		0		77	24VAC	270	24VAC	EndSw	FO	NC	GMX24-SR	Belimo
AHU-3	AE-8	Supply Air Fire Damper	??	??		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo
AHU-4	AE-1	Outside Air Damper 1	24x60	7890		0.126		66	24VAC	180	2-10V	2-10V	FC	NC	AFX24-SR N4	Belimo
AHU-4	AE-2	Outside Air Damper 2	24x60	7890		0.126		66	24VAC	180	2-10V	2-10V	FC	NC	AFX24-SR N4	Belimo
AHU-4	AE-3	Mix Air Damper	63x58	15780		0.057		174	24VAC	270	2-10V	2-10V	FO	NO	EFX24-SR N4	Belimo
AHU-4	AE-4	Exhaust Air Damper	79x26	15780		0.13		99	24VAC	270	2-10V	2-10V	FC	NC	EFX24-SR N4	Belimo
AHU-4	AE-5	Return Air Iso Damper	24x61	15780		0.14		70	24VAC	270	24VAC	EndSw	FC	NC	EFX24-S N4	Belimo
AHU-4	AE-6	Return Air Fire Damper	??	??		??		??	24VAC	??	Others	EndSw	??	??	Others	Belimo

Shop Drawing Examples

HWS FLOW

Boilers, Headered Pumps, Draw through Flow

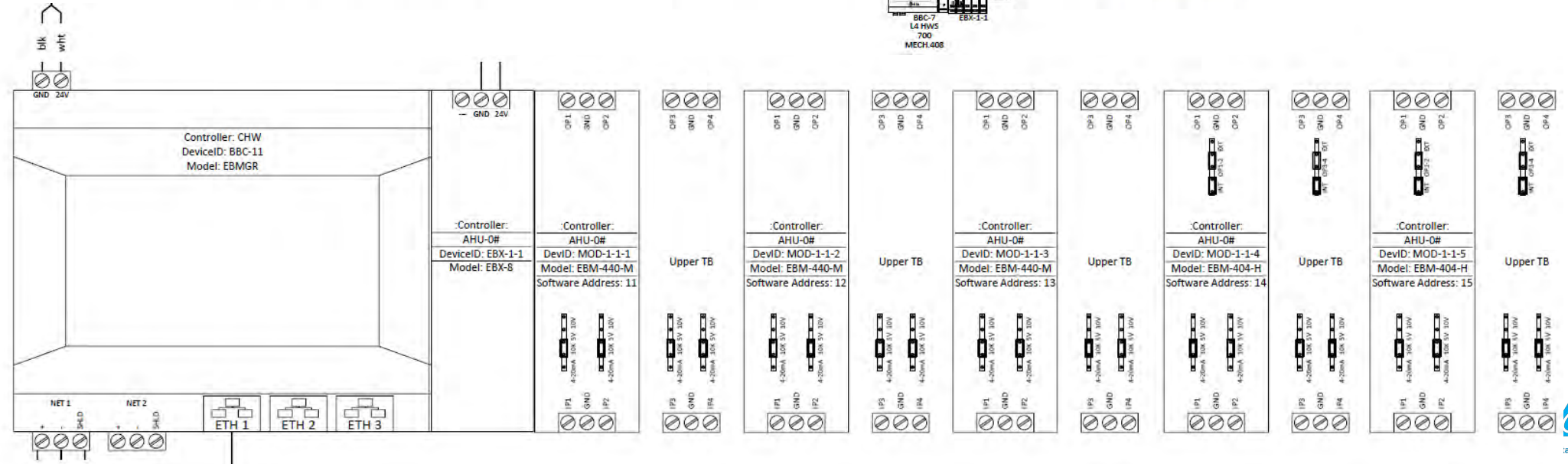


Notes:

- ⚠ Typical: 1" w/o-o-lets provided by others for STANDARD install kits.
- ⚠ Typical: 1-1/4" w/o-o-lets provided by others for HDI-TAP install kits.
- ⚠ Typical: shut off valve provided by TEAM, installed by mechanical.
- ⚠ Typical: 3/4" w/o-o-lets provided by others.
- ⚠ Typical: 1/2" manual shut off valve provided by others.

System ID	Device ID	Device Name	Device Type
System 1	BU-1	Boiler	Boiler
System 1	BU-2	Boiler	Boiler
System 1	HWP-1	Headered Pump	Pump
System 1	HWP-2	Headered Pump	Pump
System 1	EXP-TANK-1	Expansion Tank	Expansion Tank
System 1	EXP-TANK-2	Expansion Tank	Expansion Tank
System 1	COPV-1	Control Valve	Control Valve
System 1	COPV-2	Control Valve	Control Valve
System 1	COPV-3	Control Valve	Control Valve
System 1	COPV-4	Control Valve	Control Valve
System 1	TTE-1	Temperature Sensor	Temperature Sensor
System 1	TTE-2	Temperature Sensor	Temperature Sensor
System 1	TTE-3	Temperature Sensor	Temperature Sensor
System 1	TTE-4	Temperature Sensor	Temperature Sensor
System 1	TTE-5	Temperature Sensor	Temperature Sensor
System 1	TTE-6	Temperature Sensor	Temperature Sensor
System 1	TTE-7	Temperature Sensor	Temperature Sensor
System 1	NET-1	Network	Network
System 1	NET-2	Network	Network
System 1	NET-3	Network	Network
System 1	NET-4	Network	Network
System 1	NET-5	Network	Network
System 1	NET-6	Network	Network
System 1	NET-7	Network	Network
System 1	NET-8	Network	Network
System 1	NET-9	Network	Network
System 1	NET-10	Network	Network
System 1	NET-11	Network	Network
System 1	NET-12	Network	Network
System 1	NET-13	Network	Network
System 1	NET-14	Network	Network
System 1	NET-15	Network	Network
System 1	NET-16	Network	Network
System 1	NET-17	Network	Network
System 1	NET-18	Network	Network
System 1	NET-19	Network	Network
System 1	NET-20	Network	Network

Device	Notes	Install Year
1	Net	2018
2	Net	2018
3	Net	2018
4	Net	2018
5	Net	2018
6	Net	2018
7	Net	2018
8	Net	2018
9	Net	2018
10	Net	2018
11	Net	2018
12	Net	2018
13	Net	2018
14	Net	2018
15	Net	2018
16	Net	2018
17	Net	2018
18	Net	2018
19	Net	2018
20	Net	2018



Remote Commissioning Support Service



PDS – Software Solutions

Integration Platforms

2 Primary Platforms used for PDS Integrations:

a) enteliWEB Module



- Plug-on module on enteliWEB software
- Seamless integration with enteliWEB UI
 - ✓ Good for extending enteliWEB user-interface

b) Delta Loadable Module (DLM)



- Python script
- Resides in .FIL object in database
- Can be saved/loaded among controllers
 - ✓ Good for distributed deployment

Example DLM Integrations

- Unreleased / WIP / Unofficial enteliWEB Modules
 - Netbox S2 (security system)
 - OpenADR2.0b (receives OpenADR2.0b signals and propagates to BACnet)
- RED5 Integrations (by DCI)
 - Azure IoT (IoT)
 - DataGnome (agriculture growing system)
 - Gamut (OEM protocol to replace existing controls)
 - Google IoT
 - Inovonics (third-party wireless sensors)
 - ModbusTCP
 - OCPP1.6J (EV Chargers – mainly DE chargers currently)
 - ESPA
 - HTTP
 - MBus
 - Satel
 - Vertex
 - Vivotek People Counting





PDS GLOBAL enteliWEB MODULE LIST

Information contact pds@deltacontrols.com
 Trial licenses are available for all modules upon request.

*Special Order Note: Unreleased modules may require modification to meet customer use-case and compatibility.

LINK LIST:

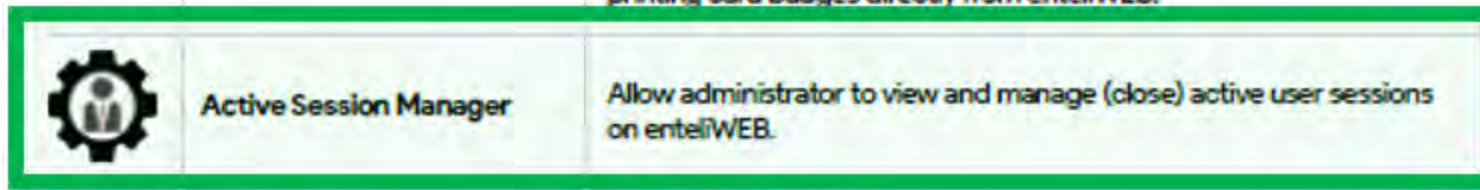
Licensing Portal: <https://licensing.deltacontrols.com/Home>
 PDS Product Page: <https://pds.deltacontrols.com/products>
 Delta Support Website: <https://support.deltacontrols.com/>
 Special Order (PDS email): pds@deltacontrols.com
 enteliCLOUD Configuration: <https://entelcloud.com/login>

LOGO	NAME	DESCRIPTION / VALUE PROPOSITION	PURCHASE METHOD
	Access Control Assistant	Streamline migration from V3 to V4 card access system. Assists with managing sites of all sizes, and includes a feature for printing card badges directly from enteliWEB.	Special Order
	Active Session Manager	Allow administrator to view and manage (close) active user sessions on enteliWEB.	Special Order
	Advanced Alarm Messaging	Customize alarm messages and send to 3rd party platforms such as Telegram and MessageBird.	Licensing Portal
	Advanced Points List Widget	A more customizable version of the standard enteliWEB points list widget. Re-order points, set custom color and font size, and download/upload widget configuration in JSON format for transferring between servers.	Licensing Portal
	Alarm Email Scheduling	Direct alarms to different users or user groups dependent on the time of day or week. Send alarms to on-call service on evenings and weekend, and regular maintenance staff during regular weekday hours.	Licensing Portal

Available on (enteliWEB) Licensing Portal & <http://pds.deltacontrols.com>

	Alarm Escalation	Escalate alarms to higher levels within organization after having gone unresolved for specified time periods.	Licensing Portal
	Alarm Kiosk	Touch-based active alarms view focused on tablets/touchscreen devices.	Special Order
	Alarm Monitor 2	An updated and customizable per-user enteliWEB alarms list. Re-define columns and colors, add persistent or temporary notes, show actionable instructions. Combines BACnet Alarms and enteliWEB System Alerts.	Special Order
	Alarm Statistics	Identifies and visualizes top 10 alarms and events over a variable time range. Enables operations staff to focus on persistent problem areas to optimize their systems.	Special Order
	BMS Reporting	A suite of custom reports that cover topics including: Access Control, Card Users, After-Hours Costing, Energy Consumption, Alarms and Alerts, Schedules and Calendars, Devices, Trendlogs, enteliWEB Users/Groups.	Free on PDS Product Page
	Bookmark Module	Provides user defined links within an enteliWEB accordion for ease of access to other web pages.	Special Order
	Bulk TL Reporting	Provides a raw CSV export of consumption meter data by Email or via FTP server for use in 3rd party reporting system.	Special Order

Active Session Manager – enteliWEB Module



The screenshot shows the "Active Sessions" table in the enteliWEB interface. The table has a header with a "Close Session" button and a "Refresh" button. The table contains two rows of data, each with a checkbox, a username, and a last action time.

Active Sessions		Refresh
Close Session		
Username	Last Action Time	
<input type="checkbox"/> PDS_Demo	2026-03-24 01:28:30	
<input type="checkbox"/> damos	2026-03-24 12:28:25	

- **View active sessions in enteliWEB**
- **Close sessions as needed**

Alarm Escalation – enteliWEB Module



Alarm Escalation

Escalate alarms to higher levels within organization after having gone unresolved for specified time periods.

Alarm Escalation: Group Mappings: Test Escalation Filter

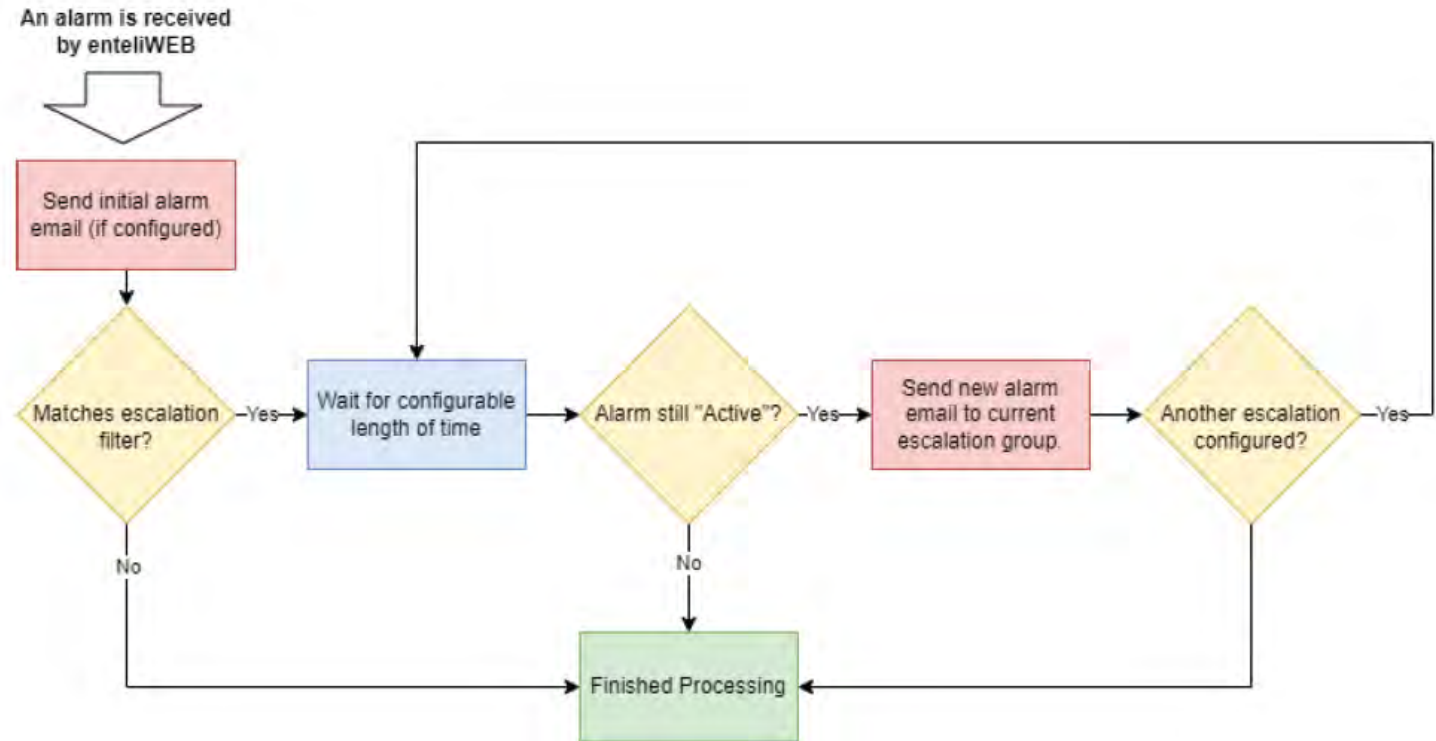
Mappings Groups About

User: Admin

Alarm Filter: Test Escalation Filter

Group	Hours	Minutes
5 Minute Escalation Group	0	5
10 Minute Escalation Group	0	10

Save






Available on (enteliWEB) Licensing Portal & <http://pds.deltacontrols.com>

LOGO	NAME	DESCRIPTION / VALUE PROPOSITION	PURCHASE METHOD
	Card User Import	Synchronize Access Card Users via live connection with LDAP or import from a CSV file, to streamline access control system upgrades to Delta Controls.	Licensing Portal
	CMMS Module	Sends alarm information to a Computerized Maintenance Management System (CMMS) for automated issue assignment to maintenance personnel. ServiceWorks Global and FSI are currently supported integrations.	Licensing Portal
	Commissioning Module	Provides a streamlined user interface for commissioning a site. Manage commissioning of objects through a purpose-built workflow.	Licensing Portal
	CUBE Integration Module	Program BACnet devices based on configuration created in the CUBE USA business management platform.	Free on PDS Product Page
	Data Transfer Module	Transfer Data between enteliWEB Sites, or collect data from a number of online weather and energy-related websites. Use accurate weather information and forecast data to make informed control decisions.	Licensing Portal
	Datapoint Counter	Export graphic bindings lists and live-value screenshots as PDF to CSV files for documentation and troubleshooting. Validate bindings and find dead links to unavailable BACnet objects.	Special Order

	Device Snapshot Tool	Run device diagnostic reports in batches, including device statistics, object values, trendlogs, and network diagnostics.	Free on PDS Product Page
	Dual Level Admin	Multi-level administration scheme for enteliWEB. Allows a high-level administrator to allow lower-level administrators to manage users without giving them full enteliWEB administration access.	Special Order
	Earthright Energy Dashboard	Attractive, easy-to-understand public energy dashboard designed for use on large screen displays.	Licensing Portal
	Energy Copy Module	Allow for meters and metering structure to be copied and re-loaded between enteliWEB instances.	Special Order
	enteliPROG	Create a flexible offline library of objects organized in 'bricks', that can then be selected for rapid creation of controller databases.	Special Order
	enteliSEARCH	Keyword full text search of both graphics and enteliWEB descriptors. Identify graphics with specific text strings or bindings for quick replacements and update of systems.	Special Order
	enteliVIZ Notepad	Virtual notebook for the exchange of information between operators. Multiple notes can be freely created and commented on by different users to match with varying systems or graphics.	Special Order

Commissioning Module – enteliWEB Module



Commissioning Module

Provides a streamlined user interface for commissioning a site. Manage commissioning of objects through a purpose-built workflow.



Commissioning Sessions

[Create a Session](#)
[Point Attributes](#)
[Group Permissions](#)
[About](#)

Session List					
<input type="checkbox"/>	Name	Created	Status	Actions	Remaining Points
<input type="checkbox"/>	Hyatt Commissioning	Jul 9, 2024 3:21 PM	In Progress	Add Points Edit Points Attribute Summary Stop Session	36
<input type="checkbox"/>	PDS Demo Commissioning	Mar 12, 2025 3:28 PM	In Progress	Add Points Edit Points Attribute Summary Stop Session	15

[Reset Session](#)
[Delete](#)

Electricity Office 1 (//SWS Demo Wall/10100.AV2001)
Complete
Object Dialog

In Progress For This Device

- Water Consumption Office 1 (AT21000)
- Water Consumption Office 2 (AT21001)
- Water Consumption Office 3 (AT21002)
- Gas Consumption Office 1 (AT21003)
- Gas Consumption Office 2 (AT21004)
- Gas Consumption Office 3 (AT21005)
- Electricity Total Consumption Office 1 (AV2)
- Electricity Total Consumption Office 2 (AV3)
- Electricity Total Consumption Office 3 (AV4)

Related Objects

- Electricity Office 1 Overview (EV2000) normal
- Notification (EVCS) distribute
- Electricity PG (PG4) running
- Electricity Consumption PG (PG3) running
- Electricity Office 1 TL (TL3) trailing

Calibrated Points

DOC Value	Measured Value	Timestamp
Record Value		

23.0918

available-10 (10) = 23.0918
available-16 (16) = 5.14

Object Attributes

Commissioned

Description

Point Status Complete

Reset To In Progress

Notes | Issues (0) | Service Orders

Working as expected - Mar 21, 2026

damica today 12:43 PM

Latest Object History

Action/Property	From	To	Timestamp
SAVEOBJECT			Apr 17, 2025 2:58 PM by wchun
Object Name	Electricity Office 1	Electricity Office 1	Mar 12, 2025 9:44 AM by wchun
Name	Electricity Energy Off...	Electricity Office 1	Mar 12, 2025 9:42 AM by wchun
Last Update	2025-03-12 15:40:33	2025-03-12 15:40:32	Mar 12, 2025 3:40 PM by wchun
Status	In Progress	Complete	Mar 12, 2025 3:40 PM by wchun
Units	kg	kw	Mar 12, 2025 3:40 PM by wchun
Last Update	2025-03-12 15:39:26	2025-03-12 15:40:33	Mar 12, 2025 3:40 PM by wchun
Status	Complete	In Progress	Mar 12, 2025 3:40 PM by wchun
Last Update	2025-03-12 15:38:46	2025-03-12 15:39:26	Mar 12, 2025 3:39 PM by wchun
Status	In Progress	Complete	Mar 12, 2025 3:39 PM by wchun

In Progress
Object Dialog

Object Attributes

Voltage 0.0V

Commissioned

Fail Position


Graphic Status

Device Tag Status

Point Status In Progress

Mark as Completed

Data Transfer Module – enteliWEB Module



Data Transfer Module

Transfer Data between enteliWEB Sites, or collect data from a number of online weather and energy-related websites. Use accurate weather information and forecast data to make informed control decisions.

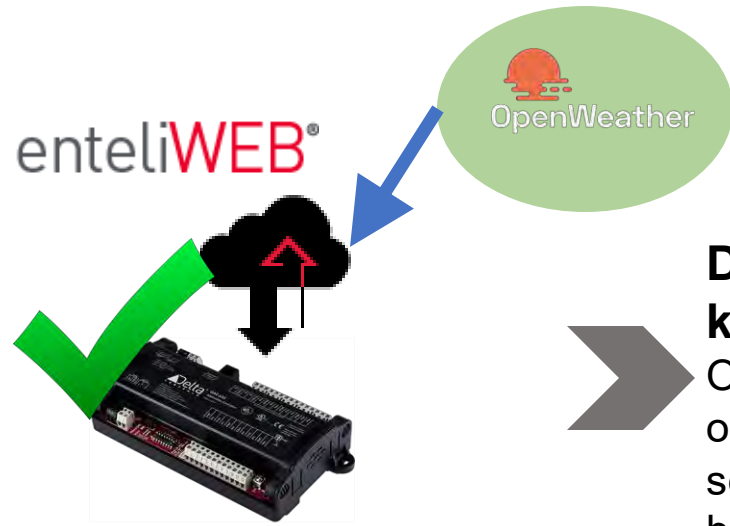
➤ **Real-time, accurate, local weather and forecast data**

– Values (13 Items)

<input type="checkbox"/>	AV81	DTM AV - Wind Degrees	120.0 °Z
<input type="checkbox"/>	AV82	DTM AV - Wind Speed	6.2 mph
<input type="checkbox"/>	AV85	DTM AV - Cloud Cover %	75.0 %
<input type="checkbox"/>	AV101	DTM AV - Current Temperature	8.1 °C
<input type="checkbox"/>	AV102	DTM AV - Current Humidity	95.0 %
<input type="checkbox"/>	AV105	DTM AV - Forecast Day 1 Hour 2 Temperature	4.3 °C
<input type="checkbox"/>	AV106	DTM AV - Forecast Day 1 Hour 5 Temperature	3.6 °C
<input type="checkbox"/>	AV107	DTM AV - Forecast Day 1 Hour 8 Temperature	3.1 °C
<input type="checkbox"/>	AV108	DTM AV - Forecast Day 1 Hour 11 Temperature	7.0 °C
<input type="checkbox"/>	AV109	DTM AV - Forecast Day 1 Hour 14 Temperature	8.6 °C
<input type="checkbox"/>	AV110	DTM AV - Forecast Day 1 Hour 17 Temperature	4.4 °C
<input type="checkbox"/>	AV111	DTM AV - Forecast Day 1 Hour 20 Temperature	5.5 °C
<input type="checkbox"/>	AV112	DTM AV - Forecast Day 1 Hour 23 Temperature	5.0 °C



VS



➤ **Did you know?**
On average, onsite OAT sensing is off by 2.5F, often more.

Send data between systems; BACnet + 19 other Data Sources/Protocols

Weather Station


- Expensive
- Difficult Installation
- Maintenance
- Inaccuracies
- Limited Lifespan

DTM Online Weather

- Priced to site IO count
- 'No tools', simple install
- Highly accurate
- Forecast data 4+ days ahead
- Wind, cloud %, precipitation

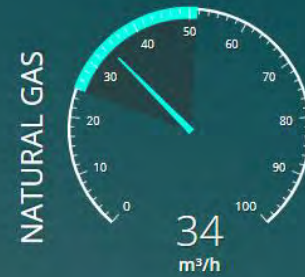
Earthright Energy Dashboard – enteliWEB Module

<https://pds.entelicloud.com/enteliweb/earthright>



Earthright Energy Dashboard Attractive, easy-to-understand public energy dashboard designed for use on large screen displays.

- HOME
- BUILDING**
- COMPARE
- CAPITAL PROJECTS
- COMPETITION
- GREEN FACTS
- GRAPHIC



SELECT A LOCATION

Office A	10,000 m ²	60 People
Office B	20,000 m ²	100 People
Office C	2,500 m ²	30 People

Current Energy Usage at Office A



White Rock
Tue, Mar 24th

7 °C
7 °C 7 °C









Wed, Mar 25th 8 °C 12 °C











Thu, Mar 26th 5 °C 9 °C

Fri, Mar 27th 4 °C 9 °C

2026-03-24 12:50

OpenWeather Map

	enteliVIZ Permissions Module	Restricts access to enteliVIZ graphics for specific users/groups.	Special Order
	enteliVIZ Workflow Module	A graphics workflow improvement tool that allows users to create enteliVIZ graphics more efficiently. Use spreadsheets to link points to pre-created graphic templates for rapid deployment.	Free on Delta Support Website
	Enterprise Scheduler	Manage interdependent sites scheduling from a single intuitive interface, to maximize scheduling efficiency and reduce unnecessary equipment runtime. Allows for effective management of campus and district-wide events and days-off.	Licensing Portal
	Facility Maintenance	Facility Maintenance add-on for enteliWEB. Allows operators to document equipment maintenance records, link control system data, and utilize a mobile app for easy field access to information via QR codes.	Special Order
	Facility Scheduler	Synchronize Event Management System (EMS) schedules with BACnet schedules. When spaces are scheduled to be in-use by staff, the BMS will run equipment with an optional pre-condition time period. Equipment remains off to save energy when spaces are not in use.	Licensing Portal
	File Manager	Allows files to be uploaded to enteliWEB and later retrieved through a UI.	Special Order
	Mail	Email client within enteliWEB that facilitates the administrator to send mass emails to users or groups within enteliWEB to notify of maintenance or other system-wide announcements.	Special Order
	Meter Correction	This module enables both bulk and automated correction of erroneous meter data in enteliWEB's energy management system. Apply corrections to ranges of data entries known to be flawed.	Free on PDS Product Page
	Meter Data Export	Provides a raw CSV export of consumption meter data by Email or via FTP server for use in 3rd party reporting system.	Special Order

	Meter Monitoring Module	Periodically check the status of the enteliWEB energy system and ensure that meter data is being imported. Generate enteliWEB alerts when meter data has failed to update.	Special Order
	Network Tool	Maps out BACnet networks connected to enteliWEB, and provides other useful network support and troubleshooting features.	Free on PDS Product Page
	OpenADR Integration	Integrate to the OpenADR protocol via enteliWEB.	Special Order
	Optigo Integration Module	Uploads Wireshark captures generated directly from enteliWEB to Optigo's Visual BACnet service. View and configure Optigo switches directly from enteliWEB.	Free on PDS Product Page
	Permission Export	Export all enteliWEB users and groups with permissions to PDF for documentation purposes.	Special Order
	Replication	Replicates enteliWEB components such as Graphics and Widgets, as well as Virtual Multi Trends and enteliVIZ Notepad data from a parent enteliWEB to a child enteliWEB(s) serving as backup.	Special Order
	Report Copy Module	Allow for reports and reporting structure to be copied and re-loaded between enteliWEB instances.	Special Order
	Tenant Billing	This enteliWEB add-on provides Tenant Billing functionality with a variety of different reports and configuration objects.	Free on PDS Product Page
	TKE Integration	Integrate to the TKE Elevator Security System to enable/lock out floors based on enteliWEB (V3) access.	Special Order
	Virtual Multi Trend	Front-End Software Multi-Trend view that replaces need for BACnet MT object. View up to 8 Tls together 'on the fly' with advanced export options and custom tree structure.	Special Order



Professional Development Services



Enterprise Scheduler



Schedule Contributors: School District 36

Editing: Classrooms

Event On Event Off Override Recurring

Week Month

Current Week

Specifications

Apr 24 - 30, 2022

Software
enteliWEB 4.21+
PDS Plugin Manager 4.21+

Client Browser
Google Chrome 80+
Microsoft Edge 80+
Mozilla Firefox 73+
Apple Safari 13+

Updated July 11, 2025



Group Permissions

Schedules Group Permissions Logs Settings About

Group Permissions
Group: Operators
Access Level: Write Access

- Schedules
- School District 36
 - Elementary Schools
 - Bright Minds
 - Classrooms
 - Room A
 - Room B
 - Room C
 - Offices
 - Gym
 - Cafeteria
 - Golden Valley
 - Classrooms
 - Offices
 - Gym
 - Cafeteria

Save

	Sun 4/24	Mon 4/25	Tue 4/26	Wed 4/27	Thu 4/28	Fri 4/29	Sat 4/30
12am			12:00 - 11:30 No Classes				
1am							
2am							
3am							
4am							
5am							
6am							
7am							
8am		Monday		Wednesday	Thursday	Friday	
9am							
10am							
11am							
12pm		Lunch		Lunch	Lunch	Lunch	
1pm							
2pm							
3pm							
4pm							
5pm							
6pm							
7pm							



Tenant Billing

This enteliWEB add-on provides Tenant Billing functionality with a variety of different reports and configuration objects.

Invoice No.: INV0005

Supply Period: 01 Aug, 2025 – 31 Aug, 2025

Generated 04:32 PM, 17 Sep, 2025

- **Free**
- Tied to meters
- Can bill on:
 - Occupied hrs
 - After-hours
 - 24/7
- Separate utilities
- Variable rates

XTA Research

Consumption Charges

Meter Name	Start Reading	End Reading	Consumption	Rate	Total Charge
Cold Water					\$103,721.04
Building 2 Office Water Meter	85,295.42 m ³	102,611.16 m ³	17,315.7 m ³	\$5.990	\$103,721.04
Electric					\$11,293.24
Building 2 Office Electricity Meter	83,707.87 kWh	100,315.59 kWh	16,607.7 kWh	\$0.680	\$11,293.24
Gas					\$41,796.00
Building 2 Office Gas Meter	76,492.3 m ³	93,210.7 m ³	16,718.4 m ³	\$2.500	\$41,796.00
Sub Total					\$156,810.28

Additional Charges

Service Charge	31 days	\$5.00 per day	\$155.00
Total:			\$155.00

Cost Allocation Total

Consumption Charges	\$156,810.28
Additional Charges	\$155.00
Tax (20%)	\$31,393.06
Total	\$188,358.34



enteliVAULT Import Tool

Description

The enteliVAULT Import Tool is a software tool that is used to import historical data samples from existing historical databases and brings that data into the enteliVAULT database. This tool is designed to be easy to configure and use, and provides detailed logging of each step of the import process. The enteliVAULT

Specifications

Software
enteliWEB 4.25+
PDS Plugin Manager 4

Data Import: Historian MySQL

TL Name	TL Reference	Status	Progress
<input type="checkbox"/> smoke detector trendlog	//George University/10000.TL2	Pending	0%
<input type="checkbox"/> Trendlog AIB3	//George University/10000.TL3	Pending	0%
<input type="checkbox"/> Trendlog AI1105	//George University/10000.TL4	Pending	0%
<input type="checkbox"/> Solar Power Production TL	//George University/10000.TL201	Pending	0%
<input type="checkbox"/> Solar Total kWh TL	//George University/10000.TL202	Pending	0%
<input type="checkbox"/> CHP-1 Enable TL	//George University/10000.TL301	Pending	0%
<input type="checkbox"/> CHP-1 Status TL	//George University/10000.TL302	Pending	0%
<input type="checkbox"/> CHP-1 Fault TL	//George University/10000.TL303	Pending	0%
<input type="checkbox"/> CHP-1 Gas Consumption TL	//George University/10000.TL304	Pending	0%
<input type="checkbox"/> CHP-1 Power Generation TL	//George University/10000.TL305	Pending	0%
<input type="checkbox"/> CHP-1 Heat Generation TL	//George University/10000.TL306	Pending	0%
<input type="checkbox"/> CHP-1 Gas Total m³ TL	//George University/10000.TL307	Pending	0%
<input type="checkbox"/> CHP-1 Power Total kWh TL	//George University/10000.TL308	Pending	0%
<input type="checkbox"/> CHP-1 Heat Total kwh TL	//George University/10000.TL309	Pending	0%
<input type="checkbox"/> Lab 1 Occupancy TL	//George University/10100.TL1	Pending	0%
<input type="checkbox"/> Pac Lab 1 SAT TL	//George University/10100.TL2	Pending	0%
<input type="checkbox"/> PAC Lab 1 AHU SAT TL	//George University/10100.TL3	Pending	0%
<input type="checkbox"/> TEMP1	//George University/10100.TL4	Pending	0%
<input type="checkbox"/> filter	//George University/10100.TL5	Pending	0%
<input type="checkbox"/> 4 hours trendPAC Lab 1 EF Flow TLPD	//George University/10300.TL6	Pending	0%
<input type="checkbox"/> Lab 2 Occupancy TL	//George University/10200.TL1	Pending	0%
<input type="checkbox"/> PAC_Admin_AHU Return Fan Speed FB TL	//George University/10300.TL1	Pending	0%
<input type="checkbox"/> PAC_Admin_AHU Supply Fan Speed FB TL	//George University/10300.TL2	Pending	0%
<input type="checkbox"/> PAC_Admin_AHU Return Fan Speed TL	//George University/10300.TL3	Pending	0%
<input type="checkbox"/> TestHisAV1 TL	//CES/20101.TL1	Completed	100%

Historian Server

Trend Log 1

2024-01-01 00:00:00 => 5
2024-01-02 00:00:00 => 6
2024-01-03 00:00:00 => 7
...
2024-01-21 00:00:00 => 25

Historian Server

Trend Log 1

2024-01-01 00:00:00 => 5
2024-01-02 00:00:00 => 6
2024-01-03 00:00:00 => 7
...
2024-01-21 00:00:00 => 25

Historian has been running since 2024-01-01, but enteliVAULT only started on 2024-01-20. Historian was stopped on 2024-01-21.



The enteliVAULT Import Tool determines that we should import data from 2024-01-01 to 2024-01-20 so that enteliVAULT has ALL data available.



Data is imported in chunks until the tool hits the earliest available data on Historian.



The import is complete and the tool moves to the next trend. enteliVAULT holds the combined data from Historian and enteliVAULT.

enteliVAULT Server

Trend Log 1

2024-01-20 00:00:00 => 24
2024-01-21 00:00:00 => 25
2024-01-22 00:00:00 => 26
...
2024-01-31 00:00:00 => 36

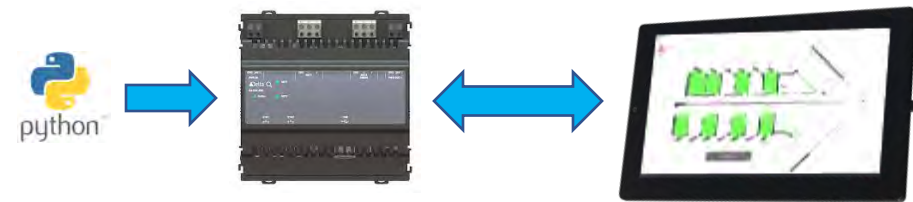
enteliVAULT Server

Trend Log 1

2024-01-01 00:00:00 => 5
2024-01-02 00:00:00 => 6
...
2024-01-20 00:00:00 => 24
2024-01-21 00:00:00 => 25
2024-01-22 00:00:00 => 26
...
2024-01-31 00:00:00 => 36

PDS – Software Solutions

Modbus TCP - DLM



enteliWEB®

enteliWEB®

- Dashboards
- Navigation
- Network

Search

TEST

- eBMGR-TCH-2 10100 (10100)
- O3-SENSE-00 10101 (10101)
- Red5-PLUS-634 10200 (10200)
- Red5-PLUS-ROOM 10300 (10300)
- Third Party
 - LPAD7-31G2 (10301)
- Workstation
 - eWEB423 (9994)

Red5-PLUS-ROOM 10300 (10300)

Objects Network Database Creation

Command Manage MODBUS

Object	Name
Values (5 Items)	
BV1900000	ModbusTCP_Map_Reload_Button
CSV1900000	ModbusTCP_Settings_Config
CSV1900001	ModbusTCP_Map
CSV1900990	ModbusTCP_Query_Command
CSV1900991	ModbusTCP_Query_Feedback
System Setup (2 Items)	
BDC1900000	ModbusTCP_Map_Reload_BDC
BDC1900001	ModbusTCP_Comm_Status_BDC
Others (2 Items)	
FIL3	ModbusTCP.dlm
FIL1011	ModbusRTU.xsd

```
[
  {
    "ip": "192.168.80.109",
    "port": 502,
    "unitid": 1,
    "poll": 5,
    "type": "write",
    "objectName": "Cell Call 1 Alarm",
    "objectRef": "BV21",
    "registerNumber": 40021,
    "registerType": "HREG",
    "byteMap": "4321",
    "registerData": "bit",
    "bitOffset": 0,
    "operation1": "none",
    "opValue1": 0,
    "operation2": "none",
    "opValue2": 0
  },
  {
    "ip": "192.168.80.109",
    "port": 502,
    "unitid": 1,
    "poll": 5,
    "type": "write",
    "objectName": "Cell Call 2 Alarm",
    "objectRef": "BV22",
    "registerNumber": 40022,
    "registerType": "HREG",
    "byteMap": "4321",
    "registerData": "bit",
    "bitOffset": 0,
    "operation1": "none",
    "opValue1": 0,
    "operation2": "none",
    "opValue2": 0
  }
]
```

L-Vis Modbus Port TCP Datapoints

No.	Dir.	OPC	Datapoint Name	D	Device	Address	Type
1	Value	<input type="checkbox"/>	Cell Call 1 Alarm		SlaveDevice_TCP_0	40021	HOLD
2	Value	<input type="checkbox"/>	Cell Call 2 Alarm		SlaveDevice_TCP_0	40022	HOLD
3	Value	<input type="checkbox"/>	Cell Call 3 Alarm		SlaveDevice_TCP_0	40023	HOLD
4	Value	<input type="checkbox"/>	Cell Call 4 Alarm		SlaveDevice_TCP_0	40024	HOLD
5	Value	<input type="checkbox"/>	Cell Call 5 Alarm		SlaveDevice_TCP_0	40025	HOLD
6	Value	<input type="checkbox"/>	Cell Call 6 Alarm		SlaveDevice_TCP_0	40026	HOLD
7	Value	<input type="checkbox"/>	Cell Call 7 Alarm		SlaveDevice_TCP_0	40027	HOLD
8	Value	<input type="checkbox"/>	Cell Call 8 Alarm		SlaveDevice_TCP_0	40028	HOLD
9	Value	<input type="checkbox"/>	Cell Call 1 Sounder		SlaveDevice_TCP_0	40031	HOLD
10	Value	<input type="checkbox"/>	Cell Call 2 Sounder		SlaveDevice_TCP_0	40032	HOLD
11	Value	<input type="checkbox"/>	Cell Call 3 Sounder		SlaveDevice_TCP_0	40033	HOLD
12	Value	<input type="checkbox"/>	Cell Call 4 Sounder		SlaveDevice_TCP_0	40034	HOLD
13	Value	<input type="checkbox"/>	Cell Call 5 Sounder		SlaveDevice_TCP_0	40035	HOLD
14	Value	<input type="checkbox"/>	Cell Call 6 Sounder		SlaveDevice_TCP_0	40036	HOLD
15	Value	<input type="checkbox"/>	Cell Call 7 Sounder		SlaveDevice_TCP_0	40037	HOLD
16	Value	<input type="checkbox"/>	Cell Call 8 Sounder		SlaveDevice_TCP_0	40038	HOLD
17	Value	<input type="checkbox"/>	Cell Call 1 Sounder Silence		SlaveDevice_TCP_0	40041	HOLD
18	Value	<input type="checkbox"/>	Cell Call 2 Sounder Silence		SlaveDevice_TCP_0	40042	HOLD
19	Value	<input type="checkbox"/>	Cell Call 3 Sounder Silence		SlaveDevice_TCP_0	40043	HOLD
20	Value	<input type="checkbox"/>	Cell Call 4 Sounder Silence		SlaveDevice_TCP_0	40044	HOLD
21	Value	<input type="checkbox"/>	Cell Call 5 Sounder Silence		SlaveDevice_TCP_0	40045	HOLD
22	Value	<input type="checkbox"/>	Cell Call 6 Sounder Silence		SlaveDevice_TCP_0	40046	HOLD
23	Value	<input type="checkbox"/>	Cell Call 7 Sounder Silence		SlaveDevice_TCP_0	40047	HOLD
24	Value	<input type="checkbox"/>	Cell Call 8 Sounder Silence		SlaveDevice_TCP_0	40048	HOLD

Energy Management Project – Our Solution

- a. The data collection platform
 - i. What capabilities does the platform possess?

enteliCLOUD[®]

Our data collection platform is an integral component of the Delta Controls enteliWEB Energy Management System (EMS). enteliWEB is a fully web-based service that provides complete control system engineering and operational control from a standard web browser for BACnet-based building control systems. Data collection is done by the enteliVAULT feature within this software. enteliVAULT provides secure data archiving for up to 100,000 trendlogs, each which can be configured to collect data at custom intervals – typically set to 5-minute intervals for energy metering applications.

enteliWEB is offered as both on-premise server-based solution, or as the cloud-hosted solution from Delta Controls named enteliCLOUD.

- ii. What, if any, utilities can be integrated into the platform?

Most utilities provide options for integrating meter data:

- a) Direct meter connection: utility meter may include pulse-contact points or Modbus/BACnet communications for directly capture of meter data into the EMS.
- b) Cloud integration: utility may provide web-based API for integration of their cloud-connected meter data directly into the EMS.

- iii. Can the platform incorporate alerts such as greater than expected energy usage, etc.?

Yes, enteliWEB has energy alerts for unexpected energy usage conditions. Alerts are either based on anomaly from a pre-defined standard deviation from the baseline usage, or based on a deviation from



Energy Management Project – Installation



Energy Management Project – Installation



Energy Management Project – Locations



Energy Management Project – Meter Data

enteliCLOUD

Dashboards
Navigation

Network

Search

- 107 Century City Mall, CA
 - 107 - Energy Monitoring Panel (50107)
 - Third Party
 - EM-251108 (665108)**
 - Workstation
- 114 Village at Meridian, ID
 - 114 - Energy Monitoring Panel (50114)
 - Third Party
 - EM-251113 (665113)
 - Workstation
- 115 Woodland Hills Mall, OK
 - 115 - Energy Monitoring Panel (50115)
 - Third Party
 - Workstation
- 122 Virginia Beach, VA
- 701 Mall of America, MN

Graphics
Alarms
Reports
Energy
enteliVAULT

Objects

Command Manage Search

<input type="checkbox"/>		Object ↑	Name	Value
- Inputs (22 Items)				
<input type="checkbox"/>		AI1	Total Real Energy (AI)	16729.9 kWh
<input type="checkbox"/>		AI2	Total Real Power	4.9 kW
<input type="checkbox"/>		AI5	System Power Factor	0.989 PF
<input type="checkbox"/>		AI9	R Phase Real Power	1.69 kW
<input type="checkbox"/>		AI10	S Phase Real Power	1.8 kW
<input type="checkbox"/>		AI11	T Phase Real Power	1.37 kW
<input type="checkbox"/>		AI12	R Phase Power Factor	0.99 PF
<input type="checkbox"/>		AI13	S Phase Power Factor	0.989 PF
<input type="checkbox"/>		AI14	T Phase Power Factor	0.987 PF
<input type="checkbox"/>		AI15	R to S Phase RMS Voltage	482.8 V
<input type="checkbox"/>		AI16	S to T Phase RMS Voltage	485.11 V
<input type="checkbox"/>		AI17	T to R Phase RMS Voltage	483.9 V
<input type="checkbox"/>		AI18	R Phase RMS Voltage	278.31 V
<input type="checkbox"/>		AI19	S Phase RMS Voltage	279.62 V
<input type="checkbox"/>		AI20	T Phase RMS Voltage	280.28 V
<input type="checkbox"/>		AI21	R Phase RMS Current	6.15 A
<input type="checkbox"/>		AI22	S Phase RMS Current	6.52 A
<input type="checkbox"/>		AI23	T Phase RMS Current	4.96 A
<input type="checkbox"/>		AI25	Line Frequency	60.024 Hz
<input type="checkbox"/>		AI42	Total R Phase Real Energy (AI)	5523.17 kWh

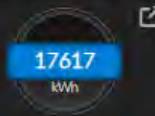


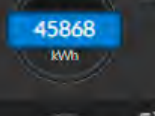
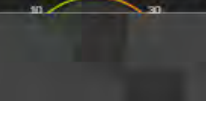
Energy Management Project – Site Map

The screenshot displays the enteliCLOUD web interface. At the top left is the enteliCLOUD logo. The top right corner shows a user greeting: "Welcome pds_david | Log out" along with a settings gear icon and a help question mark icon. The left sidebar contains a navigation menu with sections for "Dashboards", "Navigation", and "Network". Under "Network", there is a search bar and a list of site locations, including "107 Century City Mall, CA" and "114 Village at Meridian, ID". Below this is a "CPI Overview" section with icons for "Graphics", "Alarms", "Reports", "Energy", "enteliVAULT", and "Logs". The main content area is titled "North American Map" and features a map of North America with several black location pins. A legend in the bottom left of the map area indicates that a red pin represents "Alarm Present" and a black pin represents "Normal Operation". A blue sidebar on the left of the map area contains a list of site names, with "Live Data" highlighted by a green oval and a mouse cursor. The "Live Data" item has a small orange circle with the number "15" next to it. Other items in the list include "Overview", "107 Century City Mall", "114 Village at Meridian", "115 Woodland Hills Mall", "122 Virginia Beach", "701 Mall of America", "706 Disneyland Resort", "711 Colorado Mills", "755 Concord Mills", "767 Christiana Mall", "812 Southgate Center", and "834 Polo Park".

Energy Management Project – Site Overview

Live Data Overview

- North American Map
- Live Data 15
- Overview
- 107 Century City Mall
- 114 Village at Meridian
- 115 Woodland Hills Mall
- 122 Virginia Beach
- 701 Mall of America
- 706 Disneyland Resort
- 711 Colorado Mills
- 755 Concord Mills
- 767 Christiana Mall
- 812 Southgate Center
- 834 Polo Park

Location	Total Power	Total Consumption	Alarm Count
107 Century City Mall, CA	 25.5 kW	 17617 kWh	0
114 Village at Meridian, ID	 8.6 kW	 41478 kWh	0
115 Woodland Hills Mall, OK	 6.5 kW	 23061 kWh	0
122 Virginia Beach, VA	 6.3 kW	 24225 kWh	0
701 Mall of America, MN	 6.5 kW	 23061 kWh	0
706 Disneyland Resort, CA	 11.4 kW	 45868 kWh	0
	 0 kW	 0 kWh	0

Energy Management Project – Site Map Details

The screenshot displays the enteliCLOUD web interface. At the top right, it says "Welcome pds_david | Log out" with a settings gear and a help question mark icon. On the left, a navigation sidebar includes "Dashboards", "Navigation", and "Network". Under "Network", a search bar is present, followed by a list of sites: 107 Century City Mall, CA; 114 Village at Meridian, ID; 115 Woodland Hills Mall, OK; 122 Virginia Beach, VA; 701 Mall of America, MN; 706 Disneyland Resort, CA; 711 Colorado Mills, CO; 755 Concord Mills, NC; 767 Christiana Mall, DE; 812 Southgate Center, AB, CAN; 834 Polo Park, MB, CAN; 850 La Plaza Mall, TX; 868 Fifth Avenue, NY; and 877 West Edmonton Mall, AB, CAN. Below this is a menu with "Graphics", "Alarms", "Reports", "Energy", "enteliVAULT", and "Logs".

The main content area is titled "North American Map". A blue sidebar on the left of the map lists the same sites as the network view. A popup window is overlaid on the map, showing details for "834 Polo Park, MB, CAN". The popup includes a close button (X) and a share icon. The data shown is:

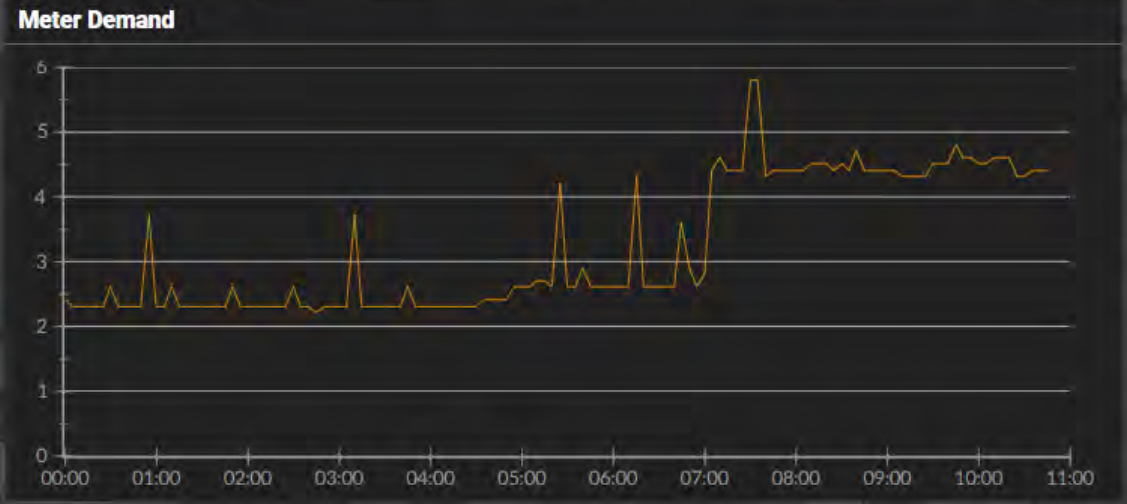
- Power Demand: 4.4 kW
- Alarm Status: Normal
- Outdoor Air Temp: -1.3 °C

A "Normal Operation" status indicator is visible on the map below the popup. The map itself shows a grayscale outline of North America with several black location pins.

Energy Management Project – Site Live Power View

- North American Map
- Live Data 15
- Overview
- 107 Century City Mall
- 114 Village at Meridian
- 115 Woodland Hills Mall
- 122 Virginia Beach
- 701 Mall of America
- 706 Disneyland Resort
- 711 Colorado Mills
- 755 Concord Mills
- 767 Christiana Mall
- 812 Southgate Center
- 834 Polo Park

834 Polo Park, MB, CAN - Power Meter



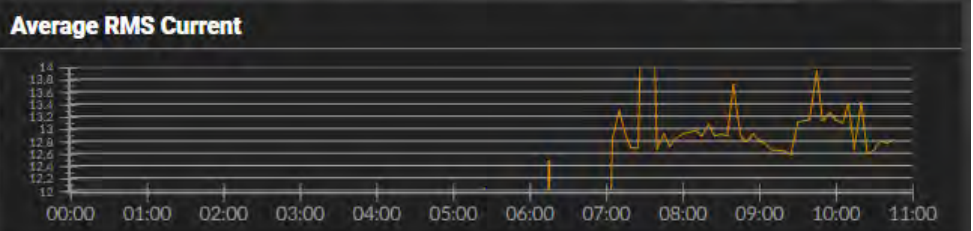
Alarms

	Voltage Loss	Power Factor
Phase R	●	●
Phase S	●	●
Phase T	●	●
Frequency	●	60.0 Hz
Meter Comm		normal



Phase Breakout

	RMS Volts	Line to Line Volts	Current	Power Factor	Real Power	Energy Consumption
Phase R	119.5 V ●	R - S: 206.9 V	12.3 A	0.96 PF ●	1.4 kW	4608.5 kWh
Phase S	119.7 V ●	S - T: 207.7 V	16.5 A	0.96 PF ●	1.9 kW	7399.9 kWh
Phase T	120.0 V ●	T - R: 207.5 V	9.9 A	0.94 PF ●	1.1 kW	3803.5 kWh



Energy Management Project – Site Energy View

⚡ 834 Electrical Consumption

Performance

Breakdown

No Comparison

Baseline Comparison

Target Comparison

Net Comparison

Measure:



Utilities:



2026-02-17



D

W

M

Y



Electrical Energy

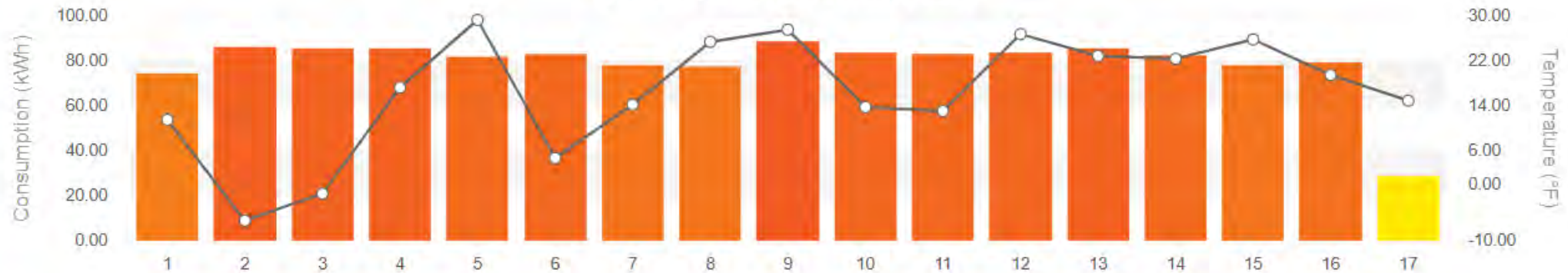
1,354 kWh

Consumption
1,354 kWh

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

1 Low Usage
41.29 kWh or lower
 1 Average Usage
59.30 kWh
 15 High Usage
77.31 kWh or higher

Consumption for February 2026



Day

North American Map

Live Data

15

Overview

107 Century City Mall

114 Village at Meridian

115 Woodland Hills Mall

122 Virginia Beach

701 Mall of America

706 Disneyland Resort

711 Colorado Mills

755 Concord Mills

767 Christiana Mall

812 Southgate Center

834 Polo Park

Energy Management Project – Site Energy Index

Dashboards

Navigation

Network

Search

- 107 Century City Mall, CA
 - 107 - Energy Monitoring Panel (50107)
 - Third Party
 - Workstation
- 114 Village at Meridian, ID
- 115 Woodland Hills Mall, OK
- 122 Virginia Beach, VA
- 701 Mall of America, MN
- 706 Disneyland Resort, CA
- 711 Colorado Mills, CO
- 755 Concord Mills, NC
- 767 Christiana Mall, DE
- 812 Southgate Center, AB, CAN
- 834 Polo Park, MB, CAN
- 850 La Plaza Mall, TX
- 868 Fifth Avenue, NY
- 877 West Edmonton Mall, AB, CAN

Graphics

Alarms

Reports

Energy

enteliVAULT

Logs

107 Century City Mall

114 Village at Meridian

115 Woodland Hills Mall

122 Virginia Beach

701 Mall of America

706 Disneyland Resort

711 Colorado Mills

755 Concord Mills

767 Christiana Mall

812 Southgate Center

834 Polo Park

850 La Plaza Mall

868 Fifth Avenue

877 West Edmonton Mall

Energy Usage Index

834 Electrical Consumption

Performance

Breakdown

No Comparison

Baseline Comparison

Target Comparison

Measure:



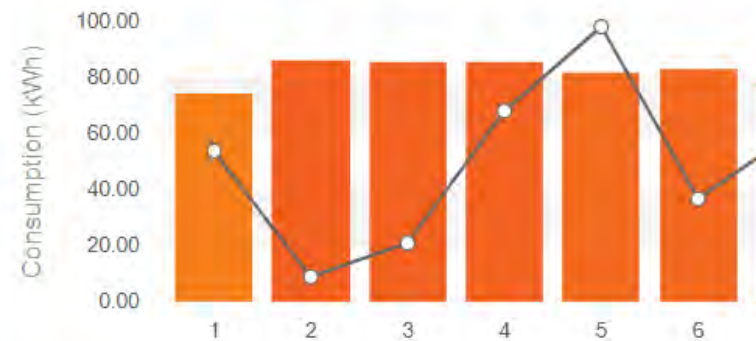
Utilities:



Electrical Energy

Consumption
1,354 kWh

1,354



Energy Management Project – Site Energy Index View

Americas Energy Use Index

Performance Breakdown

Measure: Utilities:

< 2026-02-17 > D W M Y

107 Century City Mall

114 Village at Meridian

115 Woodland Hills Mall

122 Virginia Beach

701 Mall of America

706 Disneyland Resort

711 Colorado Mills

755 Concord Mills

767 Christiana Mall

812 Southgate Center

834 Polo Park

850 La Plaza Mall

868 Fifth Avenue

877 West Edmonton Mall

Energy Usage Index

107 Century City Mall kWh/m²

6.7 kWh
5.6% Consumption

711 Colorado Mills kWh/m²

6.2 kWh
5.3% Consumption

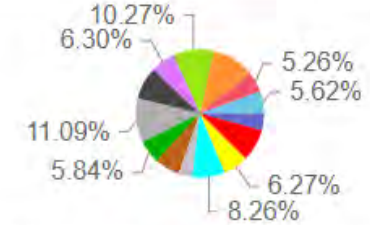
122 Virginia Beach kWh/m²

12.6 kWh
10.6% Consumption

701 Mall of America kWh/m²

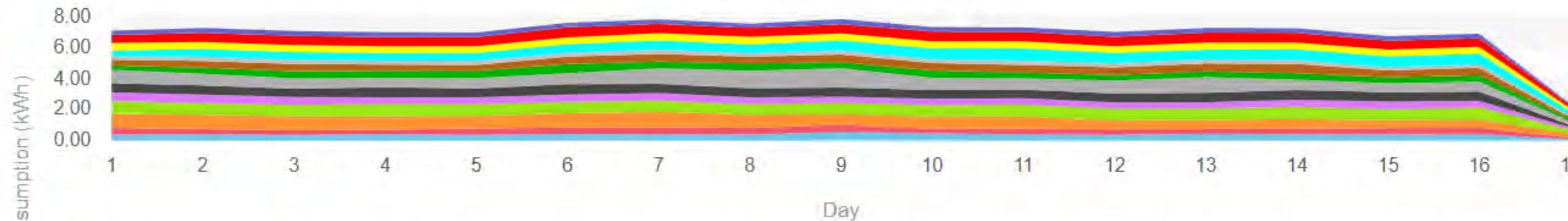
12.2 kWh
10.3% Consumption

7.5 kWh



- 107 Century City Mall kWh/m²
- 122 Virginia Beach kWh/m²
- 114 Village at Meridian kWh/m²
- 767 Christiana Mall kWh/m²
- 850 La Plaza Mall kWh/m²
- 711 Colorado Mills kWh/m²
- 701 Mall of America kWh/m²
- 706 Disneyland Resort kWh/m²
- 115 Woodland Hills Mall kWh/m²
- 877 West Edmonton Mall kWh/m²

Consumption for February 2026



- 107 Century City Mall kWh/m²
- 701 Mall of America kWh/m²
- 767 Christiana Mall kWh/m²
- 877 West Edmonton Mall kWh/m²
- 711 Colorado Mills kWh/m²
- 114 Village at Meridian kWh/m²
- 115 Woodland Hills Mall kWh/m²
- 755 Concord Mills kWh/m²
- 122 Virginia Beach kWh/m²
- 706 Disneyland Resort kWh/m²
- 850 La Plaza Mall kWh/m²
- 868 Fifth Avenue kWh/m²

Energy Management Project – Site Energy Index Comparison

767 Christiana Mall kWh/m²

13.1 kWh
11.1%
Consumption

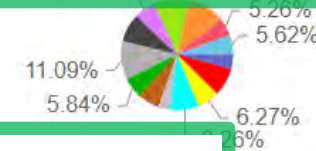
D W **M** Y ⚙

114 Village at Meridian

115 Woodland Hills Mall

711 Colorado Mills kWh/m²

5.6%
Consumption
6.2 kWh
5.3%
Consumption

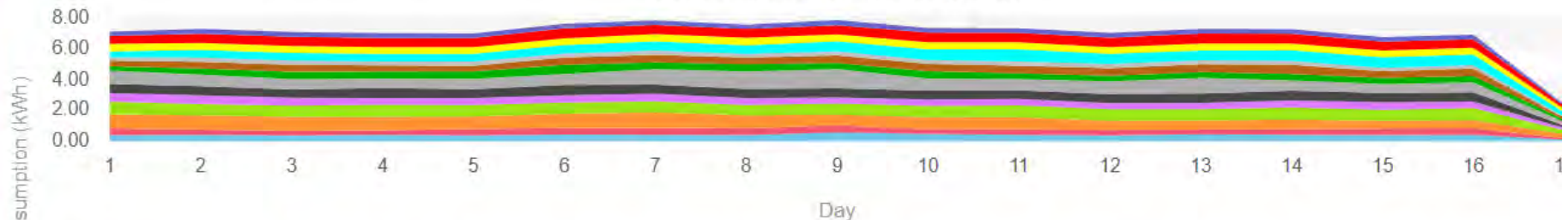


877 West Edmonton Mall kWh/m²

4.2 kWh
3.6%
Consumption

11 Colorado Mills kWh/m²
01 Mall of America kWh/m²
06 Disneyland Resort kWh/m²
15 Woodland Hills Mall kWh/m²
77 West Edmonton Mall kWh/m²

Consumption for February 2026



- 107 Century City Mall kWh/m²
- 711 Colorado Mills kWh/m²
- 122 Virginia Beach kWh/m²
- 701 Mall of America kWh/m²
- 114 Village at Meridian kWh/m²
- 706 Disneyland Resort kWh/m²
- 767 Christiana Mall kWh/m²
- 115 Woodland Hills Mall kWh/m²
- 850 La Plaza Mall kWh/m²
- 877 West Edmonton Mall kWh/m²
- 755 Concord Mills kWh/m²
- 868 Fifth Avenue kWh/m²

Energy Usage Index

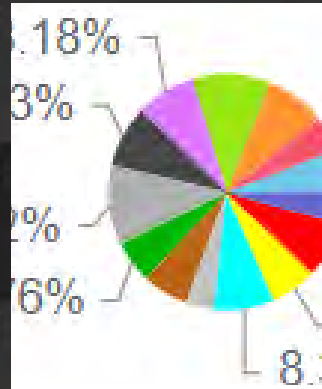
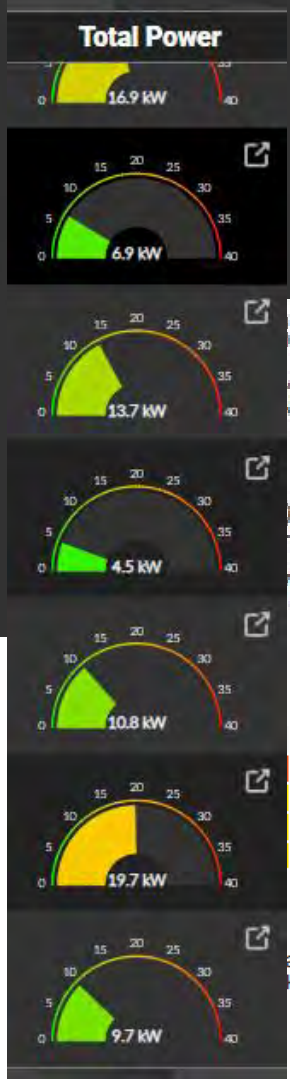
Energy Management Project – Turning Meter Data into Power & Energy Visualization

Name	Value
Total Real Energy (A1)	17621.4 kWh
Total Real Power	4.8 kW
System Power Factor	0.987 PF
R Phase Real Power	1.68 kW
S Phase Real Power	1.79 kW
T Phase Real Power	1.36 kW
R Phase Power Factor	0.99 PF
S Phase Power Factor	0.988 PF
T Phase Power Factor	0.986 PF
R to S Phase RMS Voltage	485.27 V
S to T Phase RMS Voltage	487.53 V
T to R Phase RMS Voltage	486.09 V
R Phase RMS Voltage	279.49 V
S Phase RMS Voltage	281.22 V
T Phase RMS Voltage	281.69 V
R Phase RMS Current	6.07 A
S Phase RMS Current	6.5 A
T Phase RMS Current	5.77 A
Line Frequency	60.024 Hz
Total R Phase Real Energy (A1)	5818.78 kWh
Total S Phase Real Energy (A1)	6813.83 kWh
Total T Phase Real Energy (A1)	4988.86 kWh
Configuration	0
R Phase Current Rating	300 A
CT Ratio Secondary	1
R Phase Voltage Multiplier	1
System Voltage	600 V
PowerPrint Voltage Tolerance	10 %
Simple Mode	Simple
EM-251108	Operational

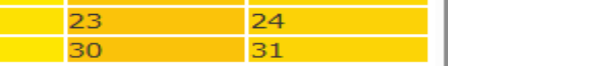
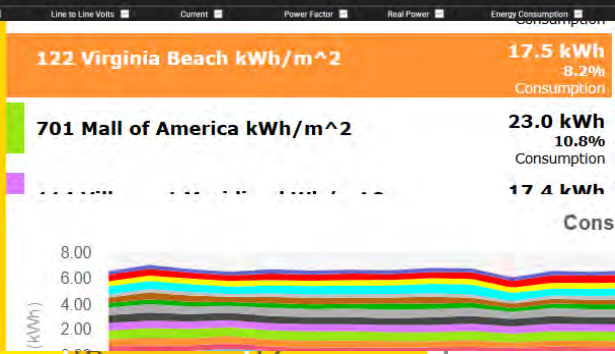
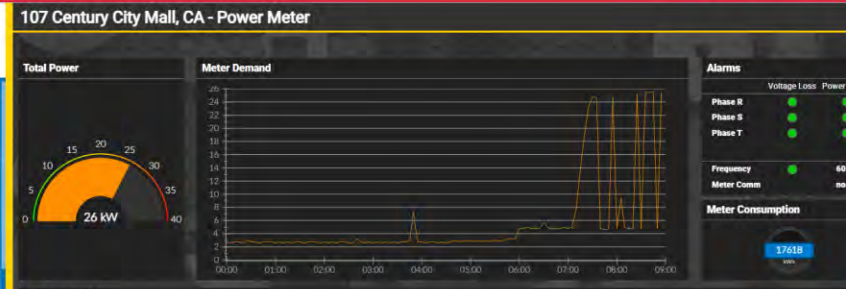


Legend

- Alarm Present
- Normal Operation

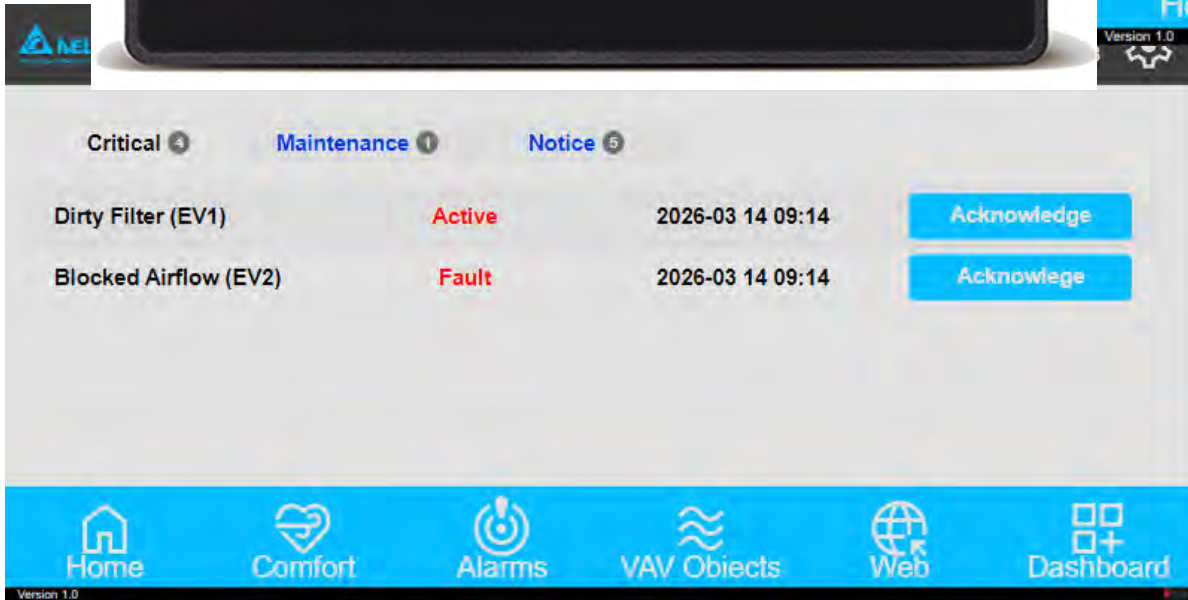
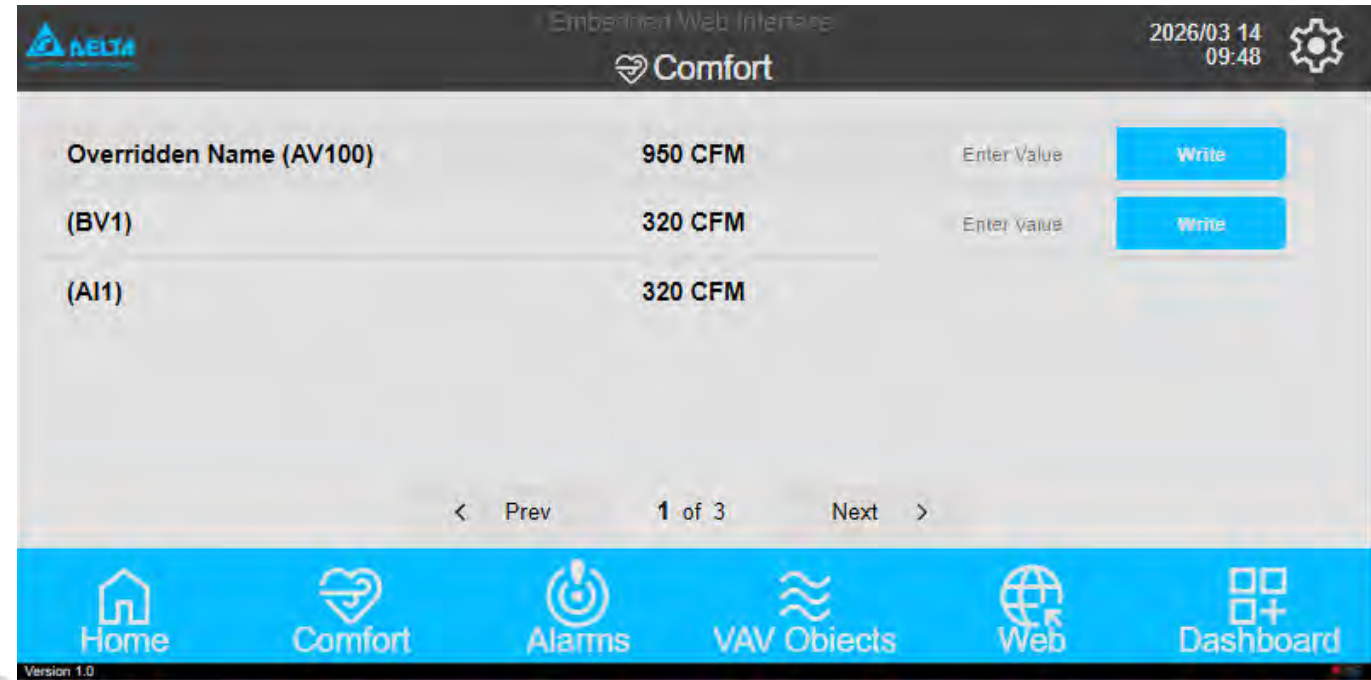
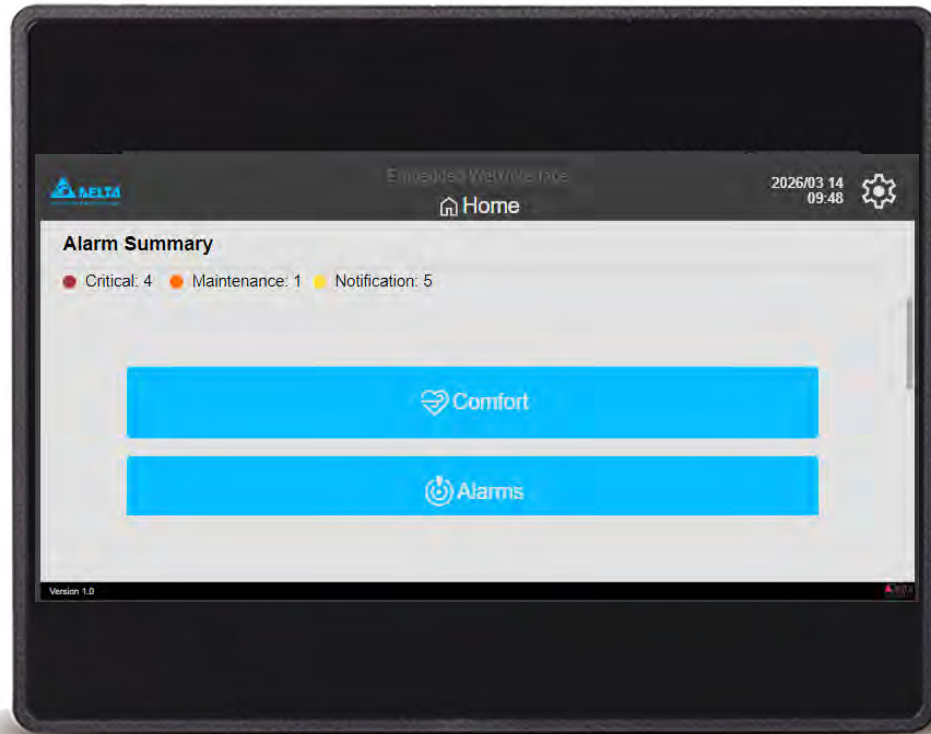


Mon	Tue	Wed	Thu	Fri	Sat	Sun
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Usage 13 kWh or lower 13 Average Usage 118.83 kWh 1 High Usage 135.84 kWh or higher

Future (this year) – embedded eSKETCH Points Dashboard



- Configurable multi-level menu pages, object view/edit pages, alarm view pages – via CSV in Database.
- Save/Load for rapid deployment
- Ideal for local touchscreen displays, operator interface

