

# Upgrade to Connected Lighting and Automation



Several years ago, industry experts predicted sustainability and energy efficiency would redefine the landscape of new commercial building lighting installations. Now, due to COVID 19's impact on real estate market conditions, commercial buildings need to offer digital age amenities to attract tenants and their employees. To thrive in the new future of commercial real estate, facility owners and developers need a cost-effective way to incorporate connected lighting and automation with advanced technology amenities to new and existing buildings.

## **Enter Denton Digital Building Intelligence**

We at PoE Texas have created a comprehensive connected lighting and automation controls platform for enterprise facilities called Denton Digital Building Intelligence or Denton DBI that is based on Power Over Ethernet technology. Far more than a lighting control system, Denton DBI utilizes Power Over Ethernet to create a full facility automation platform on an Internet Protocol (IP) network.

By design, it connects PoE to non-PoE devices including access control, sensors, cameras, tablets for digital signage, and, yes, LED lighting. Denton DBI also integrates with the latest IoT devices whether they be PoE blinds, wireless and battery free EnOcean controls, sensors, Zigbee, Bluetooth, or Wi-Fi based devices. It also leverages the PoE network to manage new or existing 120-277 volt AC circuits and phase dimming light fixtures to meet ANY energy code both now and in the future including ASHRAE and Title 24 and their derivative requirements.

Our 2-wire PoE solution offers retrofittable low voltage automation so you can reuse the existing wiring in the walls while still getting the most advanced automation control.

Once it is installed, digital building intelligence provides an open standards-based interface through a RESTFUL API to network applications so you can easily connect it to systems essential to your business.

All this advanced technology operates on a secure managed digital backbone using Power Over Ethernet that can integrate the next twenty years of technology including space utilization, asset tracking, and more with no major overhaul required.

### What is PoE??

This white paper will keep this description high level and save the technical details for a later time. Simply put, Power Over Ethernet takes the data communication that drives the digital age of communication and combines it with inherently safe DC power.



### Why choose PoE?

PoE means you can choose to invest in the technology backbone that drives modern business in a more cost-effective way. From a capital expenditure perspective, it saves on average 30% over comparable systems.

From an operational standpoint, you can count on 15-45% savings.

PoE based systems typically offer a better than 36 month Return on Investment.

**Return on Investment**

Cost Effective Digital Age Amenities ... Power Over Ethernet just effectively adds another amenity and controls when they make the right business decision from the start.

Not A Low Cost Replacement for Single Light Fixtures ... The inherent system intelligence flexibility of PoE based amenities adds value to installations where amenities, sustainability, and cost drive business decisions.

36 mo ROI	30% Capex Savings	15% Opex Savings
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Non-PoE Systems with Roughly Equivalent Amenities

Most importantly, PoE is inherently safe. Per the National Electrical Code (NEC) 725, the system is considered Class 2 wiring. Most local building codes support the installation of PoE without the requirement of conduit or class 1 labor rates.

Finally, Power Over Ethernet operates on the same (REST API) protocol as the internet, so you are future proofing your facility when you upgrade against any form of obsolescence or supply chain risk.

**THE DECISION TO UPGRADE**

- SAFE ELECTRICITY – Inherently safe, intelligent power
- TECHNOLOGY LEADER – Future and feature proofing
- RELEVANT AMENITIES – The infrastructure for a digital age
- ROI – Universal platform for systems without costly barriers

“Power Over Ethernet forms the backbone of the digital age for automation, lighting, communication, system distribution, Internet of Things, and data analytics. It's the right foundation for business, enabling what's next.”

TREND SETTING

## 5 Steps to Upgrade



Upgrading your facilities to connected lighting and automation is easier than you think. PoE has been around for more than 20 years and is a proven technology. The challenge to upgrading to connected automation and lighting is no longer about the technology, it is managing the strategy and the process of adoption.

The process is made up of 5 steps, and they are:

- 1 - Pick the Right Partner(s)
- 2 - Create the Concept
- 3 - Assemble the Team
- 4 - Prepare the Path
- 5 - Build Bridges



### Pick the Right Partner(s)

The first, and most important, step you will take is selecting your automation partner. You must select a complete connected automation solution. What does that mean?

PoE lighting, where you plug ethernet cables into light fixtures, is a great demonstration and rather dramatic. But the reality is that a connected system that can only control lights that have plug-in PoE is just a novelty. It is exciting to see and not really useful for your whole facility.

The right solution should manage, on one platform, the full range of building systems, such as: traditional AC lighting and AC systems, wireless IoT devices, retrofitted low voltage automation, PoE enabled IoT devices, and any non-PoE building device such as LED lights. And it needs to be fully compatible with other systems that may currently be employed.

We built the Denton Digital Building Intelligence system as a comprehensive PoE-based solution. You use a PoE network to manage your entire facility, not just a small part.

**Pick the Right Partner**

The Complete Connected Automation Solution... Avoid the limited full novelty of PoE lights with a network port. Choose a building and lighting automation system built on Power Over Ethernet infrastructure. The right solution should manage on one platform the full range of building systems: traditional lighting using AC power, wireless IoT devices, retrofitted low voltage automation, PoE enabled IoT devices, and any LED light (Dimmable Constant or Constant Voltage).

**Denton DBI Compatibility**  
Built on PoE Texas network hardware, the Denton Digital Building System is designed for all PoE and low voltage IoT devices as well as open compatibility through a simple REST API.

**Traditional AC Control**  
Power Over Ethernet

**Retrofit Automation**  
On Power Over Ethernet

## Create the Concept



Next, you need to address key questions upfront to maximize your ROI (return on investment). The key decisions you need to make are:

1. What Value Add Amenities increase your ROI? Lighting, access control, blinds, space utilization?
2. Network Architecture? Do you want a distributed system that gives you flexibility to expand and modify or do you want a centralized system that keeps all your networking equipment in one place? Typically, buildings less than 100k ft<sup>2</sup> employ centralized and multi-floor and larger than 100k ft<sup>2</sup> employ more distributed systems.
3. How to segregate Operational Technologies from Information Technologies

At PoE Texas we support our systems from concept to completion, so you can always count on a PoE expert from PoE Texas to help guide you through the process. We can also introduce you to experienced industry experts who can advise you and your management team on what choices add the most value to your business.

## Assemble the Team

Because PoE Texas offers “concept to completion or C2C” support with a “beginning to end” hardware and software solution, we can help assemble the team you need.

For example, on a standard project like a tenant finish out of spaces less than 100,000 square feet we can bring together an architect, a lighting designer, a low voltage installer, and the Denton Digital Building Platform.

High-end or Complex projects like luxury hospitality, educational institutions, corporate campuses, and high-rise towers require a larger team. In addition to the architect, lighting designer, and MEP





designers, you will need a low voltage technology consultant and PoE Texas working together. As a team we can focus on the solutions that best fit your strategic needs.

PoE Texas leverages our broad industry contacts to introduce you to experienced technology consultants, qualified low voltage installers, and Lighting & MEP consultants. We also have experience and industry expertise to help train your preferred team members on how to succeed with PoE automation and lighting.

### Prepare the Path

To get the project started correctly, you will need to get alignment with key stakeholders so you are getting the right results. Based on best practices from previous projects and top industry experts, you need to focus on four main areas:

Concept introduction to the Authorities Having Jurisdiction or AHJ's - this is an introductory meeting arranged by your architect, civil engineer, or project manager with the building permitting and development department. You explain what you are doing with a low voltage automation system, and your key objective is demonstrating that you are bringing design and construction professionals with experience in building codes and standards.

During that meeting and subsequent meetings, they will want to understand how the National Electrical Code (NEC) and the National Fire Protection Association guidelines in NFPA 101 apply to the system you are planning to build. The key activity here is providing them with the right information to demonstrate your project meets and complies with the safety standards.

To do that, you will have full access to drawings, specifications, and informational packages developed by PoE Texas and its partners.

To get the best financial results, you will need to help your general contractor, low voltage contractor, and, yes, your electrical contractor understand the project scope split. This is an important step to accomplish upfront to avoid additional cost in the project. Your contractors need to understand before bidding, how the project scopes will be split so they can price the project accurately.

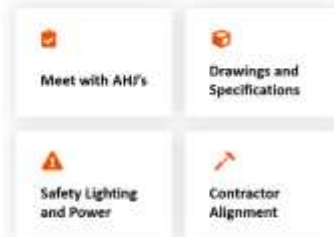
DENTON  
Energy Solutions Center

expertise



### Prepare the Path

Best Practices from Successful PoE-based Projects  
Don't reinvent the wheel, take advantage of best practices from previous projects!



## Building Bridges

Finally, and potentially most importantly for the long-term success of your facility, it is time to start the integration of your new Operational Technology or OT facilities managers and your Informational Technology or IT managers. The key here is to understand that your IT managers will not necessarily have or want the resources or skills to manage your new Operational Technology network, especially if you are outsourcing your IT management to a service provider.



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# collaboration

## Building Bridges

Integrating the New OI with IT ... Bridging Operational Technology (OT) facilities operators and Informational Technology (IT) managers early simplifies the adoption of new technology by creating a dialog how much or how little to integrate the two disciplines.



IT Managers may be in-house providers or 3<sup>rd</sup> party managed service providers

It is recommended to completely isolate your Informational Technology, such as Wi-Fi and internet for users, and your Operational Technology, such as lighting and sensors. We have established methods to support this requirement.

You may also choose to bring on a facility manager experienced with connected automation and lighting or have PoE Texas provide the training your in-house staff needs to be able to manage your new facility. Either way, it is important to start that conversation on how you will handle the integration of IT and OT up front.

## Measuring Success

Let's discuss how to measure your success in the process of upgrading your facility to PoE-based connected lighting and automation. There are three metrics that you can use to measure:



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## Measuring Success

- 01**  
**Schedule**  
On-time Delivery of Material and Services  
Pick products and services that are:  
1 - Available in inventory for delivery to meet schedule deadlines  
2 - Provide Plug-and-Play Compatibility
- 02**  
**Capex Planning**  
Maximize Use of Time and Resources  
Provides a Comprehensive Solution for:  
1 - Complete facility - PoE, AC, or Retrofit  
2 - Maximizes technology to reduce expensive on-site support
- 03**  
**Expertise**  
Demonstrated Performance and Knowledge  
Choose a team with a proven track record of Project and Product Development to inherently understand the needs of your project.

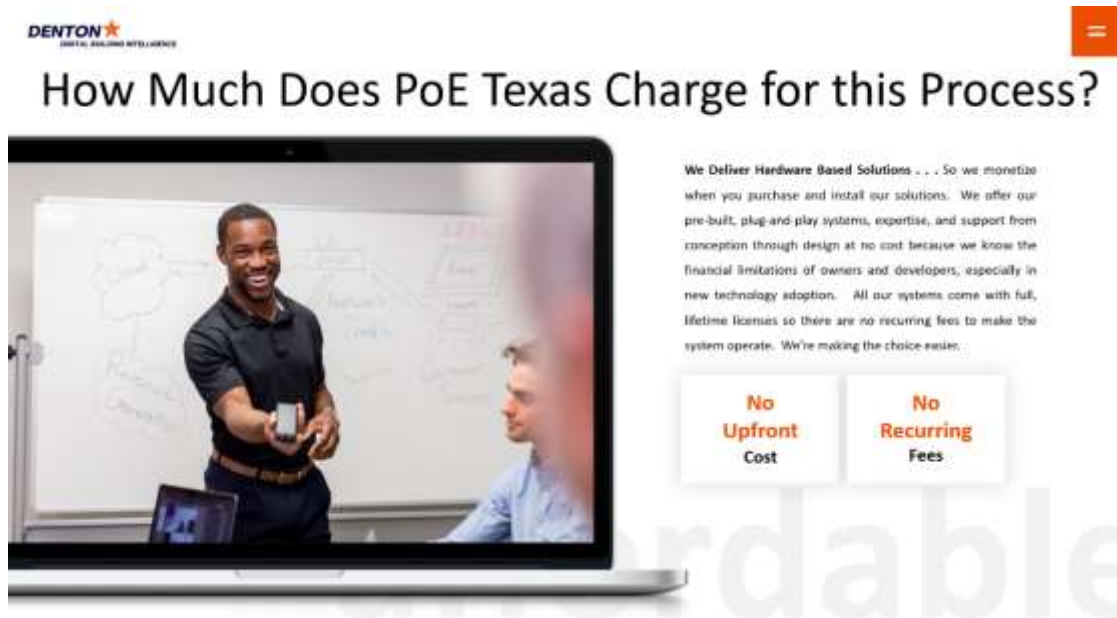
1 - On-time delivery of Material and Services - In the facilities world, project timelines are paramount. You can track the success of your project by whether your products and services can hit the deadlines you need.

2 - Capex Planning - Your project should make the best use of available resources to create a complete facility from AC power to PoE to retrofitting. It should optimize technology to minimize expensive on-site support and customizations.

3 - Expertise - Choose a team with a proven track record of Project and Product Development to inherently understand the needs of your project.

## Conclusions

Let me answer one last question for you right now: How much does PoE Texas charge for all this process?



The image shows a laptop screen displaying a website. The website has the Denton logo at the top left, which includes a star and the text 'DENTON DIGITAL BUILDING INTELLIGENCE'. The main heading on the screen is 'How Much Does PoE Texas Charge for this Process?'. Below the heading is a video frame showing a man in a dark polo shirt standing and presenting to a seated man in a light blue shirt. To the right of the video frame, there is a block of text: 'We Deliver Hardware Based Solutions . . . So we monetize when you purchase and install our solutions. We offer our pre-built, plug-and-play systems, expertise, and support from conception through design at no cost because we know the financial limitations of owners and developers, especially in new technology adoption. All our systems come with full, lifetime licenses so there are no recurring fees to make the system operate. We're making the choice easier.' Below this text are two white boxes with orange text: 'No Upfront Cost' and 'No Recurring Fees'. A large, faint watermark 'rdable' is visible across the bottom of the laptop screen.

PoE Texas is a hardware-based solution provider, and we monetize when you purchase and install our products. We offer our pre-built, plug-and-play systems, expertise, and support from conception through design at no cost because we know the financial limitations of owners and developers, especially in new technology adoption. All our systems come with full, lifetime licenses so there are no recurring fees to make the system operate. We are making the choice to upgrade to connected lighting and automation easy.

When you are ready to learn more, visit our website at [www.poetexas.com/denton-dbi/](http://www.poetexas.com/denton-dbi/). You'll find tools you need to get started including a free online estimating tool, the designer toolkit with all the documentation your design team needs to get started, and a way to schedule your own one-on-one consultation with a PoE expert.

Welcome to the Digital Age of Intelligent Buildings.

**Find additional information regarding PoE Texas and the Denton Digital Building Intelligence Platform below.**



“ team

## PoE Texas Team

Success is driven by the people you're working with. The PoE Texas has a proven track record of performance in technically challenging and complex environments making them an excellent partner for your project.

**Tyler Andrews**  
CEO & Project Executive



**Joseph Herbst**  
CTO & Project Manager



**Erica Hockley**  
Account Manager



**Maria Medel**  
Service & Support







# In the Heart of Texas

**Austin Based . . .** The technology center of the Central US, PoE Texas is strategically placed to be able to support the entire US and Canada with the fastest average delivery times and centrally located for optimal project management. And, of course, conveniently located on all your preferred social channels

-  2600 Mchale Ct Suite 100, Austin TX 78758
-  +1 512-479-0317
-  [sales@peotexas.com](mailto:sales@peotexas.com)