

SPECIFICATIONS

ELEMENTS TO INCLUDE IN THE DESIGN SPECIFICATIONS

DIVISION 25: INTEGRATED AUTOMATION

REFERENCE STANDARDS:  
ICEA S-90-661 - Category 3, 5, & 5e Twisted Pair Indoor cable  
ICEA S-116-732-2013 - Category 6 and 6A, 100 Ohm, individually shielded indoor cable  
NCA/BICSI 568 - Standard for Installing Building Telecommunications Cabling  
ANSI/BICSI 007-2020 - Information Communication Technology Design and Implementation for Intelligent Buildings and Premises  
ANSI/BICSI N2-17 - Practices for the Installation of Telecommunications and ICT Cabling Intended to Support Remote Power Applications  
TIA-568 - Commercial Building Telecommunications Cabling Standard Set  
IEEE 802.3bt - 4-Pair PoE

QUALITY ASSURANCE  
Manufacturer's Qualifications:  
a. Network Automation Controls: Denton Digital Building Intelligence by PoE Texas or approved equivalent system with support of components comparable to basis of design.  
b. Cabling shall be qualified for IEEE 802.3bt power and approved by Network Automation Controls manufacturer and match Division 17 and 27 approved cabling.

Installer Qualifications:  
a. Automation & Controls: Manufacturer certified installer of Denton Digital Building Intelligence with field installation experience  
b. Cabling: Certified cable installer for specified cabling system  
b. Employing a BICSI Registered Communications Distribution Designer (RCDD)  
c. Employing BICSI Registered Cabling Installation Technicians (RCIT)

BASIC AUTOMATION MATERIALS AND METHODS

POE AUTOMATION AND LIGHTING CONTROL SYSTEM  
1. System installation begins once the space is enclosed and all unrelated overhead and wet work in spaces is complete.  
2. System will not be powered on or used for temporary lighting until areas are weather protected and dry.  
3. System will be installed per manufacturer's instructions.  
4. All MAC addresses shall be recorded as part of the as-built drawing sets.

5. Low Voltage Installation Contractor shall
- a. Coordinate with manufacturer for remote configuration of spaces, nodes, screens, and other automations per design basis.
  - b. Coordinate design and cable runs with Division 17 and/or 27 network cabling.
  - c. Coordinate rack space and cable management with Division 17 or 27 networking hardware.
  - c. Coordinate networking and power runs with Division 26 contractor
  - d. Train Owner's personnel to operate, maintain, and program control system at project close out.
  - e. Deliver hand-over configuration files and as-build drawings which have been reviewed and approved by manufacturer.
  - f. Coordinate with Division 26 or Electrical Contractor and Division 28 Electronic Safety and Security for inspection and permitting approval purposes.

- BASIS OF DESIGN  
PoE Texas Denton Digital Building Intelligence Products (reference Automation Device Schedule)
- a. DENT-COR-TAP - PoE powered automation and wireless communication gateway
    - 1. IEEE 802.3af PoE - 15 watts
    - 2. Enocean communication module (optional)
    - 3. Wi-Fi enabled hub
    - 4. DMX gateway (optional)
    - 5. ZigBee bub (optional)
  - b. DENT-LINC-CC/CV - PoE powered automation node for LED lighting and non-PoE devices and sensors
    - 1. Wiring terminations using wire nuts
    - 2. IEEE 802.3bt 4 Pair PoE - 90 watts
    - 3. 4x Constant Current or Constant Voltage Outputs
    - 4. 4x Inputs for sensors and devices
  - c. DENT-TAB-7 - 7" Touchscreen Controller for automation and control
  - d. DENT-GBT-8-UL924 - Emergency PoE lighting transfer control system with approved UL 924 accessories
  - d. Installer shall use Manufacturer Compatible Systems:
    - 1. IGOR Automation Nodes
    - 2. Powershades Automated Blinds
    - 3. Enocean Wireless Controls
    - 4. Heckler Design Mounts and Accessories
    - 5. BOXIT Design Mounts and Accessories
    - 6. SmartThings iPad Mounts and Accessories
  - e. Installer will install Automation System Compatibility
    - 1. Open RESTFUL API system
    - 2. ZigBee
    - 3. DMX

- PoE Texas Networking Hardware
1. Network hardware shall be DC microgrid compatible devices approved to work with Denton Digital Building Intelligence with IEEE 802.3bt PoE and sufficient power capacity to service the ports connected to it. Approved devices are:
- a. PoE Texas PS-53v3000w - AC to DC power rectifier for DC microgrids
  - b. PoE Texas GBTS-28-24-M - Managed 24 Port IEEE 802.3bt PoE switch for Automation and Lighting
  - c. PoE Texas GBT-24-M - Managed 24 Port IEEE 802.3bt PoE injector for Automation and Lighting
  - d. PoE Texas GBTS-10-8-M - Managed 8 Port IEEE 802.3bt PoE switch for Distributed Automation and Lighting
  - e. Network Automation Controls approved alternative networking hardware

- DEVICES AND FIXTURES
1. Contractor shall furnish all lighting and lamps unless otherwise noted.
2. Light fixtures shall be LED unless otherwise specified.
3. Lighting shall be approved as compatible by the Network Automation Controls manufacturer.

- GATEWAY SOFTWARE
1. Basis of Design for Control System Software: Denton Digital Building Intelligence configured to meet the lighting performance specifications as available in this this order:
- a. Owner performance requests within the design functions of the system
  - b. Per the Lighting Controls Narrative provided
  - c. Manufacturer best-practices recommendations for systems
2. Optional Cloud-based system through Denton Remote Access

- FIELD QUALITY CONTROL
1. Comply with manufacturer specifications and standards for as-built documentation
2. Schedule and manage remote field configuration and commissioning with manufacturer.



PoE Automation and Lighting Pre-Design

3616 Far West Blvd  
Suite 117-294  
Austin TX 78731

DATE:  
April 27, 2023

TITLE:  
SPECS PAGE 1  
OF 2

DRAWING NUMBER:

OT-01

SPECIFICATIONS

ELEMENTS TO INCLUDE IN THE DESIGN  
SPECIFICATIONS

DIVISION 26: ELECTRICAL AND LIGHTING

BASIC MATERIALS AND METHODS

POE AUTOMATION AND LIGHTING CONTROL SYSTEM

- 1. Unless specified in the drawings as Division 26 lighting on the Electrical or Lighting Drawings, lighting and controls shall be installed by the Division 25 Automation Network installer also referenced as Low Voltage Installation contractor.
- 2. Contractor shall provide and install conduits, wall glands, and raceways as necessary for the Division 25 Building Automation System and shall be coordinated with the Low Voltage Installation contractor RCDD in advance of the start of construction.
- 3. Contractor shall coordinate with Low Voltage Installation contractor to provide sufficient temporary power during the construction phase to power pre-configured automated light fixtures during the construction phase.
- 4. Contractor shall notify Low Voltage Installation contractor when power is delivered to the final termination point or outlet in the Main Distribution Frame (MDF) room for configuration and set up of system architecture.
- 4. Contractor shall coordinate with Low Voltage Installation contractor for the testing and inspection of emergency lighting systems according to NFPA 101 or governing local requirements.

DIVISION 27: COMMUNICATIONS

QUALITY ASSURANCE

- 1. Approved cabling supplier shall be coordinated with Division 25 requirements for Automation Network Control including IEEE 802.3bt PoE.
- 2. Main Distribution Frame (MDF) rack and cable management hardware shall be coordinated and approved by RCDD for the Division 25 Automation Network Control cabling.

BASIC MATERIALS AND METHODS

- 1. Contractor shall coordinate with Division 25 contractor, also referred to as Low Voltage Installation contractor:
  - a. Main Distribution Frame (MDF) rack and cable distribution space or space within MDF rooms for OT Network Automation racks as required.
  - b. Networking cabling runs for Information Technology (IT) and Operational Technology (OT) provided on the OT drawings sets.
  - b. Delivery of a secure network connection on an isolated Local Area Network connection for the OT system. Due to the nature of OT systems, this connection may be temporary during the construction phase and become permanent during the operations hand over.

FIELD QUALITY CONTROL

- 1. As required by specification, provide Division 25 or Low Voltage Installation contractor cable testing reports for OT network cable runs.

DIVISION 28: ELECTRONIC SAFEY AND SECURITY

QUALITY ASSURANCE

- 1. Approved cabling supplier shall be coordinated with Division 25 requirements for Automation Network Control including IEEE 802.3bt PoE.
- 2. Security and Access Control System compatible with PoE Texas' Denton Digital Building Intelligence.

BASIC MATERIALS AND METHODS

- 1. Contractor shall coordinate with Division 25 contractor, also referred to as Low Voltage Installation contractor:
  - a. Testing and inspection of emergency lighting and fire alarm system with the Automation Network Control system.



PoE Automation and  
Lighting Pre-Design

3616 Far West Blvd  
Suite 117-294  
Austin TX 78731

DATE:  
April 27, 2023

TITLE:  
SPECS PAGE 2  
OF 2

DRAWING NUMBER:

OT-02