

**SECTION 260101**  
**BUSWAY SYSTEM**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The Busway System shall be designed and manufactured to the following standards:
  - 1. Low Voltage Directive (73/23/EEC) including Amendment (93/68/EEC)
  - 2. Low Voltage Switchgear and Control gear Assemblies, Part 1: Type Tested and partially type tested Assemblies, IEC 60439-1: 1999
  - 3. Low Voltage Switchgear and Control gear Assemblies, Part 2: Particular Requirements for Busbar Trunking systems (Busways), IEC 60439-2: 2000
  - 4. Underwriters Laboratory Standard, UL 857 – The common UL, CSA, and ANCE Standard for Busways that is derived from the sixth edition of CSA Standard C22.2 No. 27, the thirteenth edition of UL 857, and the third edition of NMX-J-148-1998-ANCE.
  - 5. CUL Listing
  - 6. National Electric Code (NEC) – Article 364 – Busway
  - 7. NEMA AB1, Molded Case Circuit Breakers and Molded Case Switches
  - 8. NEMA KS-1, Enclosed and Miscellaneous Distribution Equipment Switches (600VAC)
  - 9. NFPA 70 – National Fire Protection Agency

**1.02 SUMMARY**

- A. This specification covers the electrical characteristics and general requirements for a Busway System, hereafter referred to as Busway. The system shall be designed primarily for overhead power distribution of electrical power. Loads fed from Plug-in units can be added or removed without shutting down the Busway.
- B. Section Includes:
  - 1. Three-phase Busway System with the following features:
    - a. Power Feed
    - b. Extruded aluminum busway housing with conductors
    - c. Miscellaneous hardware for system installation
    - d. Installation tool
    - e. Plug-in units for power distribution

**1.03 DEFINITIONS**

- A. EMI: Electromagnetic interference.
- B. LED: Light-emitting diode.
- C. PC: Personal computer.
- D. THD: Total harmonic distortion.

**1.04 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include data on features, components, ratings, and performance.
- B. Shop Drawings: For Busway include:
  - 1. Detail equipment assemblies and indicate dimensions, weights, and location and identification of each field connection.
  - 2. Wiring Connection: For power and monitoring wiring.
  - 3. Orientation of Plug-In units face in final installation.
  - 4. Include Plug-In Schedule with detailed description.

**1.05 INFORMATIONAL SUBMITTALS**

- A. Manufacturer Certificates: For each product, from manufacturer.

## **1.06 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For Busway System include in operation and maintenance manuals.

## **1.07 QUALITY ASSURANCE**

- A. Source Limitations: Obtain Busway and Plug-in Units through one source from a single manufacture.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. UL Compliance: Listed and labeled under UL 857.
- D. NFPA Compliance: Mark components as suitable for installation in computer rooms according to NFPA 75.

## **1.08 WARRANTY**

- A. Warranty: The Busway manufacturer shall guarantee the entire system against defective material and workmanship for a period of one (1) year from date of shipment.

# **PART 2 PRODUCTS**

## **2.01 MANUFACTURERS**

- A. Basis of Specification is Starline Track Busway as manufactured by LeGrand.
- B. Acceptable alternates are the following, once they are approved by the Consulting Engineer for use on the project. A specification compliance by paragraph showing Comply, Deviate, or Exception is to be submitted one (1) week prior to bid date.

## **2.02 OPERATIONAL REQUIREMENTS**

- A. Environmental Conditions: The Busway shall be capable of operating continuously in the following environmental conditions without mechanical or electrical damage, degradation or derating of operating capability.
  - 1. Ambient Temperature for Electronic Components: 32 to 104 deg F (0 to 40 deg C).
  - 2. Relative Humidity: 0 to 95 percent, noncondensing.
  - 3. Altitude: Sea level to 4000 feet (1220 m).

## **2.03 PERFORMANCE REQUIREMENTS**

- A. The Busway shall perform as specified in this specification while supplying rated full-load current as shown on the project drawings.
- B. Voltage: Busway shall be rated to 600V AC and DC
- C. Frequency: DC to 60 Hertz
- D. Busway Amperage: 100 Amp, as shown on Drawings

## **2.04 COMPONENTS**

- A. Power Feed (End Feed)
  - 1. The power feed shall provide the connections from the incoming cables to the Busway System. The Power Feed shall be a NEMA enclosure with access panels for incoming cabling. The Power Feed shall have internal connection to a section of Busway conductors.
- B. Busway Frame and Enclosure (Busway Section)
  - 1. Housing: The Busway housing sections shall be constructed of extruded aluminum and provide 100% system ground. The lengths provided on the project shall be as recommended and selected by the manufacturer to meet the project requirements. The top of the busway shall have a slot running the length of the busway to provide attachment points for installation of the Busway. The bottom of the Busway shall have a continuous opening to accept the Plug-in units. This opening shall pass the UL hypothetical finger probe test and IEC's IP2X test for ingress protection

2. Conductors: All conductors shall be made of copper for 100 Amp Systems and sized to handle 100% of the Busway rating under continuous operation up to the maximum ambient temperature. The conductors shall be electrically isolated from the housing. All insulators must be UL and IEC compliant.
  3. Withstand Rating: The Busway shall meet the kA withstand rating shown on the drawings. If none is shown, the minimum acceptable is 22kA.
- C. Installation Tool
1. The installation tool provided by the manufacturer is to be used to make all joint connections between Busway sections and Power Feeds.
- D. Miscellaneous Hardware
1. End Cap: The End Cap is installed at the end of the Busway run.
  2. Joint Kit or Bus Connector: The Joint Kit or Bus Connector is used to make electrical and mechanical connections between Busway sections and Power Feeds.
  3. Busway Hangers: Busway Hangers are installed in the top slot of the Busway and provide for connections to the suspension system provided by the installing contractor.
  4. Closure Strips: The open slot of the Busway for the 1200A, 800A, 600A busway must be enclosed to prevent access to the conductors of the Busway. For smaller amperage Busway, this is to be provided only if shown on the drawings.
- E. Plug-In Units
1. Plug-in Units shall be polarized to avoid incorrect installation
  2. Plug-in Units shall use a circuit breaker for branch circuit protection.
  3. Plug-in Units shall have locking clips or bolt-on tabs to secure units to the Busway.
  4. Plug-in Units shall be configured by the manufacturer to balance the load based on quantity of Plug-in Unit types provided.
  5. Plug-in Units shall be factory APT tested for proper operation and orientation.
  6. Plug-in Units shall receive serial # label codes on each unit after passing factory APT testing.
  7. Factory APT test reports on Plug-in Units are available upon request.
  8. Plug-in Units shall comply with UL 857 sections 7.4.8 and 5.4.1.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine areas and conditions, with Installer present, for compliance with requirements for conditions affecting performance of the Busway.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.02 INSTALLATION**

- A. The contractor shall install the Busway in accordance with manufacturer's instructions.
  1. The Busway runs shall consist of lengths as shown on the drawings.
  2. The Plug-in units orientation shall be as indicated on the drawings.
  3. Hanging of the Busway shall be done using the Busway hangers from a structure above the Busway. The hangers shall connect to the Busway, and to an all thread rod provided by the installing contractor. The spacing of the hangers along the busway is 10 feet or less as recommended by the manufacturer.
  4. The power feed shall have connection provisions for the contractor supplied feeder cabling. The power feed shall be connected to the Busway section using a joint kit or bus connector.
  5. Connection of sections of the Busway shall be done using a joint kit or bus connector. The connection shall be made per the manufacturer's instructions. The use of the manufacturer supplied Installation Tool is required.
  6. An End Cap shall be installed at the end of the Busway run.
- B. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

- C. Connections: Contractor shall make connections to supply circuits according to manufacturer's instructions and project drawings.

### **3.03 GROUNDING**

- A. The housing of the busway shall be the system ground.

### **3.04 IDENTIFICATION**

- A. Installing Contractor to identify components and wiring according to Section 260553 "Identification for Electrical Systems."

### **3.05 FIELD QUALITY CONTROL**

- A. Installing Contractor Inspections:
  - 1. Comply with manufacturer's written instructions.
  - 2. Inspect interiors of enclosures, including the following:
    - a. Integrity of mechanical and electrical connections.
    - b. Component type and labeling verification.
    - c. Ratings of installed components.
- B. Installing Contractor to prepare inspection reports.

## **PART 4 PREFERRED VENDOR**

- A. Buc-ee's has secured a preferred vendor for purchase and service of the UPS:
- B. [Pinnacle Power Solutions.](#)
- C. For details and pricing contact Brandon Stefan: brandon@pps-ups.com :
- D. 832-934-7775
- E. One (1) End Feed UF100T3C4S-SNSN-0100C-STD0
- F. One (1) 10 Foot Busway Section US100T3C4S-1000C-STD0
- G. One (1) End Cap SECT3
- H. One (1) Junction Kit SJK100T3
- I. One (1) Closure Strip SCST3-1
- J. Four (4) Rod Mounted Hangers UBRH-1
- K. One (1) Installation Tool ST3IT
- L. Four (4) Tap Boxes (L520R) UCT3C92S-14-1AGFN-STD Evenly Placed

### **END OF SECTION**