

SECTION 26 05 23**CONTROL - VOLTAGE ELECTRICAL POWER CABLES****PART 1 - GENERAL****1.1 REFERENCED DOCUMENTS**

- A. Comply with Division 1 - General Requirements and related documents.
- B. Comply with all other Division 26 sections as applicable.
- C. Refer to other Divisions for coordination of work with other portions of work.

1.2 DESCRIPTION

- A. Work Included: Provide power wiring, raceways, and connections for items of equipment and control systems.
- B. All wiring for every system shall be installed in metal conduit. Refer to Section 26 05 32 Raceways for conduit types and materials for specific locations and applications.
- C. Where wiring is installed in electrical metallic tubing, the conduit shall be factory color coded as follows:
 - 1. Clear Electrogalvanized - 120 volt and higher circuits
 - 2. Fire Alarm - Red
 - 3. Controls for HVAC - Green
 - 4. Lighting Control Systems - White
 - 5. Telecommunications - Blue
 - 6. Security and Access Control - Orange
 - 7. Audio Visual Systems - Black
 - 8. Electric Power Monitoring - Yellow
- D. Related work specified in other sections:
 - 1. 23 09 00 - Instrumentation and Controls for HVAC
 - 2. 26 00 00 - Electrical
 - 3. 26 05 19 - Low Voltage Electrical Power Conductors and Cables
 - 4. 26 05 32 - Raceways
 - 5. 26 28 16 - Enclosed Switches and Circuit Breakers

1.3 QUALITY ASSURANCE

- A. The equipment supplied and installed shall meet the requirements of the National Electrical Code and all applicable local codes and ordinances.
- B. All equipment supplied shall be Underwriter's Laboratories Inc. listed and so labeled.

1.4 SUBMITTALS

- A. Samples: Provide samples upon specific request.
- B. Product Data: Submit manufacturer's product data giving complete description for sizes employed, material types, and electrical ratings.

1.5 WARRANTY

- A. The material shall be warranted to be free from defect and in proper working order for one year following the date of final acceptance.

1.6 COORDINATION

- A. For equipment furnished under other Divisions, obtain equipment supply and wiring requirements from the Contractor supplying the equipment.
- B. For equipment furnished under Division 23, obtain complete temperature control system drawings, and power supply and interlock wiring requirements from the Contractor furnishing the systems.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Refer to related work specified in other sections for material requirements.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Work Included: The Electrical Contractor shall provide:
 - 1. Branch circuit and motor feeder circuit conductors, raceway, connections, and overcurrent protection for each motor or item of equipment furnished by the Owner or other Contractors.
 - 2. Motor Control Centers, where indicated on the drawings.
 - 3. Installation of motor controllers furnished by the Owner or other Contractors, along with branch circuit and motor feeder circuit conductors, raceway, and connections in accordance with the manufacturer's approved wiring diagrams.
 - 4. Disconnect switches and combination disconnect switches and motor controllers, where indicated on the drawings or required by codes, except as provided as an integral part of manufactured equipment.
 - 5. Power supply conductors, raceway, connections, and overcurrent protection for input power to HVAC Temperature Controls, HVAC Automation, and HVAC Energy Management Systems in accordance with approved rough-in and connection diagrams furnished by the system suppliers.

6. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to ensure that all work is contained within the General Contract. Nothing herein shall be construed to confine the General Contractor from assigning the work to any member or group of contractors deemed best suited to executing the work to effect the contract. Refer to specific bidding instructions of the General Contractor for the actual division of the work. The General Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.
- B. Work Not Included: The Mechanical Contractor shall provide:
1. Motors and equipment, erected in place and ready for final connection of power supply wiring, along with manufacturer's approved wiring diagrams.
 2. Motor controllers, in suitable enclosures and of the type and size in accordance with the manufacturer's recommendations and NEMA requirements, along with properly sized overload elements and approved wiring diagrams.
 3. Disconnecting switches or devices which are normally provided as a part of manufactured equipment.
 4. Rough-in and connection diagrams for input power supply and connections for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems.
 5. Conductors, raceways, devices, and connections for low voltage control, line voltage control, and signaling systems for the HVAC Temperature Control, HVAC Automation, and HVAC Energy Management Systems in accordance with the provisions of Division 26, and approved systems shop drawings to provide complete operating systems in accordance with the functional requirements of the specifications.
 6. The above represents an outline of the work for the purpose of describing one division of the work which is acceptable to ensure that all work is contained within the General Contract. Nothing herein shall be construed to confine the General Contractor from assigning the work to any member or group of contractors deemed best suited to executing the work to effect the contract. Refer the specific bidding instructions of the General Contractor for the actual division of work. The General Contractor is fully responsible for the installation of complete, operating systems in accordance with the functional intent of the specifications.
- C. Completely connect all electrical consuming items of mechanical equipment, kitchen equipment, shop equipment, etc., provided by the Owner or other trades. Outlets of various types have been indicated at equipment locations, but no indications or exact location or scope of work is indicated on the accompanying drawings.
- D. Refer to details and information furnished by the Owner and various equipment suppliers for equipment wiring requirements and to the Plumbing and Heating, Ventilating and Air Conditioning Specifications for the scope of the connections to equipment provided under those sections, and determine from the various trades by actual measurements at the site, and by direction from the Owner and the Architect the exact locations of all items. Roughing-in drawings, wiring diagrams, etc., required for

the proper installation of the electrical work will be furnished by applicable trades furnishing equipment. Request the drawings and information required in writing to the equipment supplier in ample time to permit preparation of the drawings and to permit proper installation of all wiring. Obtain from those furnishing equipment the size and type of service required for each motor or piece of electrical equipment and verify that the service to be installed is compatible.

3.2 INSTALLATION

- A. All conduits shall terminate in conduit boxes on motors where possible. When motors are direct-connected, the conduit may continue rigid into the box, but when motors drive through belts and have sliding bases, a piece of flexible liquid tight conduit not less than 12 inches long shall be connected between the rigid conduit and the motor terminal. Where motors are not provided with conduit boxes, terminate the conduit in a conduit at the motor.
- B. Where disconnecting switches are not provided integral with the control equipment for motors, provide and install a disconnect switch in the circuit to each motor where indicated and required by code. Switches shall be installed as close as possible to the motor or controls they serve and they shall be within sight of the motor or control circuit.
- C. Be responsible for installing all conductors and protective devices serving equipment motors furnished by others in strict conformance with all applicable codes, regardless of any discrepancy in plans and/or mechanical equipment sizes variations, unless covered by directives issued by the Architect.

END OF SECTION