

SECTION 260520 – SHIELDED INSTRUMENTATION & VARIABLE FREQUENCY DRIVE CABLE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Furnish all labor, materials, equipment and incidentals required to provide shielded cable as shown and specified.

1.2 SUBMITTALS

- A. Shop Drawings:
 - 1. Comply with Section 013323.
- B. Product data:
 - 1. Submit for review, copies of manufacturer's engineering data and technical information for shielded instrumentation cables proposed for use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Instrumentation Cable
 - 1. Single Shielded Pair or Triad: 300 volt.
 - a. Tinned copper, #18 AWG or larger, stranded, polyethylene insulated conductors twisted with aluminum-polyester shield, stranded tinned #20 AWG copper drain wire and overall chrome vinyl jacket, 100 percent shield cover. Rated for 300 volts minimum.
 - b. Products and Manufacturers:
 - 1) Belden No. 8760, No. 8770, No. 9318, or No. 9365
 - 2) Alpha No. 2422, No. 2432.
 - 2. Multi-paired Shielded 300 volt:
 - a. Tinned copper, #18 AWG, stranded PVC insulated conductors, twisted in pairs with aluminum-polyester shield over each pair and its stranded drain wire (#20 AWG), overall chrome vinyl jacket, 100 percent shield cover.
 - b. Products and Manufacturers:
 - 1) 3 pair - Belden No. 9369.
 - 2) 6 pair - Belden No. 9389.
 - 3) 9 pair - Belden No. 9390.
 - 4) 11 pair - Belden No. 9391.
 - 5) 15 pair - Belden No. 9392.
 - 6) Dekoron Poly-set.
 - 7) Okonite type SP-OS.

- B. Variable Frequency Drive Shielded Cable
 - 1. Four conductor shielded cable
 - a. Shielding to have an overall shield with an 85% tinned copper braided shield.
 - b. Cable to be Belden Variable Frequency Drive Cable 29502 through 29531 wire size as indicated or equal.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Delivery, Storage and Protection: Comply with Section 016600.

3.2 INSTALLATION

- A. Install in conduit separated from power cables unless otherwise shown on the Drawings.
- B. Install instrumentation cable conduits as far as possible from power cable conduit.
- C. Ground shield at one end only, as recommended by instrument manufacturer, and as approved by the Owner.
- D. Terminate stranded conductors with pre-insulated crimp type ring tongue terminals properly sized to fit fastening device and to fit wire size.
- E. Identification: Identify all conductors at each terminal and splice location. Identification number labels shall be Thomas & Betts type WSL cable markers or equal with clear heat shrink tubing over the marker.
- F. Install CAT 5e and CAT 6 cabling in accordance with Commercial Building Telecommunications Pathways and Spaces ANSI/TIA/EIA 569-A and Commercial Building Telecommunications Cabling Standard ANSI/TIA/EIA 568-A.

3.3 TESTING

- A. Test each circuit in the presence of the Owner after permanent cables are in place to demonstrate that the circuit and connected equipment perform satisfactorily and that they are free from improper grounds and short circuits.
- B. Maintain a written record of circuits being tested, marking down circuit number and descriptive function and results of each step in the test procedures including repeated tests.
- C. Any cable or a portion of the cable which fails when tested shall be replaced with a new cable for the full length and retested.

END OF SECTION 260520