

Advanced Cable Bus, Incorporated Typical Specification

Cable Bus General Specification

1. A complete metal enclosed Cable Bus system shall be provided including enclosures, conductors and all necessary accessories. Accessories include but are not limited to, fittings, equipment seals, wall/floor seals, fire stops, termination boxes, tap boxes, connection flanges, insulated conductors, termination lugs, termination kits and other accessories as required. The Cable Bus and all of its components are to be suitable for indoor and outdoor use with a minimum of (1) one cable diameter spacing between conductors and ventilation maintained throughout the system.
2. All elements of the Cable bus housing shall be so fabricated to eliminate any sharp edges that may damage conductor insulation or injure personnel.
3. Cable Bus system shall be manufactured by Advanced Cable Bus, Incorporated.

Construction

1. The Cable Bus housing is to be aluminum, welded construction of ventilated design with side members manufactured from extruded 6063-T6 aluminum alloy. The maximum allowed stress used in design is to be 10,000 PSI.
2. Top and bottom covers are slotted for ventilation with ventilation opening being equal to 50% of the cover surface. Cover openings are to be of such size as to not allow a quarter inch rod to penetrate into the Cable Bus Housing. Top covers are to be fastened to the Cable Bus enclosure with no. 10 self-drilling screws and spaced 24 inches on centers in order to allow cover to be removed for inspection. Bottom covers are to be factory installed and welded to form an integral part of the Cable Bus housing.
3. All Cable elbows shall have radius design in accordance with the cable used. In no instance shall the minimum cable bending radius be exceeded.
4. Cable Bus housing splice joints shall be high pressure bolted type in order to avoid any structural weakness at splice joints.
5. All cable support blocks are to be designed in segments to maintain a minimum of (1) one cable diameter between cables in both horizontal and vertical planes to obtain a free air rating of the conductors. The Cable Bus housing shall be designed with cable support blocks 36 inches on center for horizontal straight sections and 18 inches on center for vertical straight sections and elbows. This spacing is designed to prevent movement or damage of the cable during short circuit conditions. Cable Bus systems are to be rated to withstand a short circuit of 100KA RMS symmetrical amps.

Electrical

1. The Cable Bus side rail shall be able to carry a continuous current rating of 1000 amps without exceeding 40°C temperature rise above ambient. Resistance across the Cable Bus housing splice shall not exceed 50 microhms. Cable Bus housing shall be grounded at sufficient intervals to prevent potential above ground to occur in the event of fault.
2. Current conductors shall be single conductor cables, insulated for 90°C operating temperature in wet or dry location and insulated in accordance with ICEA P-46-426 interim STD #1 & 2 of ICEA publication #S-66-524 based on the voltage and amperage specified.
3. Conductors within the Cable Bus housing shall have a specific phasing arrangement to minimize the current imbalance between conductors, maintain low impedance of the system and minimize inter-phase and intra-phase unbalance.
4. Interleaving of conductors within the cable bus housing is not permitted. All current carrying conductors are to be continuous without any intermediate splices and be pulled in place after the Cable Bus housing has been installed. Electrical connections shall be equipment and/or tap points only. All cable termination materials are to be furnished by the Cable Bus vendor.
5. Current balance and temperature rise calculations are available upon request in support of section 2 & 3 of the specification.