COMMSCOPE®

Technical bulletin

commscope.com

Use of CommScope Uniprise cabling for PoE applications

Early versions of the IEEE 802.3 standard covered the powering of remote devices over Type 1 (IEEE 802.3af) and Type 2 (IEEE 802.3at) systems. The IEEE 802.3bt standard covering the use of Type 3 and Type 4 power sourcing equipment (PSE) was published in January of 2019. A Type 4 PSE provides the maximum power to remote devices by supporting 0.86 Amps per pair (0.43 Amps per conductor) across all four pairs of the cabling. The standard recommends that Class D cabling (or better) be used to support Type 4 remote powering. In addition to the IEEE standard, the EN 50174-2: 2018 standard provides guidance on the bundling of cables supporting remote powering and recommends limiting bundle sizes to 24 cables taking care to include air gaps between bundles. These recommendations are consistent with those from CommScope and are in line with those contained in TIA TSB-184A aimed at limiting the temperature rise in bundled cabling[1].

In addition to the structured cabling standards, there are additional requirements imposed on the connector contacts that ensure they do not corrode or suffer degradation due to arcing when unplugged while under load. The applicable test standard for Types 1 and 2 is IEC 60512-99-001 while Types 3 and 4 are covered by the IEC 60512-99-002 standard.

CommScope has performed the full complement of IEC 60512-99-001/002 testing on its products and can assure customers that the Uniprise connectivity including the USL, UNJ and UKJ family of modular jacks, UNP panels, UC1, MiNo6, and MiNo6A cords, fully comply with the requirements set forth in the IEC 60512-99-001 and IEC 60512-99-002 standards.

Further, CommScope has carried out extensive testing confirming that existing and legacy Uniprise Class D (Cat 5e) or higher cable fully complies with the recommendations contained in the IEEE 802.3af, IEEE 802.3at, and IEEE 802.3bt standards.

CommScope recommends that customers follow the CommScope installation guidelines when installing their cabling products. These guidelines were developed to ensure that the temperature rise of cable bundles used for PoE applications is limited to 15 ℃. This is most easily accomplished by limiting the number of cables in a bundle to 24 for horizontal cable and to 12 for 28 AWG cords.

References

IEEE P802.3bt-2018 Standard for Ethernet Amendment 2: Power over Ethernet over 4 Pairs
EN 50174-2: 2018 Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings
IEC 60512-99-001:2012 Connectors for electronic equipment - Tests and measurements - Part 99-001: Test schedule for engaging and separating connectors under electrical load - Test 99a: Connectors used in twisted pair communication cabling with remote power
IEC 60512-99-002:2019 Connectors for electrical and electronic equipment - Tests and measurements - Part 99-002: Endurance test schedules - Test 99b: Test schedule for unmating under electrical load
TIA TSB-184-A Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling

Visit our website or contact your local CommScope representative for more information.

For technical assistance or customer service, visit us at:
http://www.commscope.com/SupportCenter

The products referenced by this bulletin may be covered by U.S. patents or their foreign equivalents. For patents, see www.commscope.com/ProductPatent/ProductPatent.aspx

[1] CommScope does not endorse the use of 30 AWG cables for use in PoE applications.