

Category Cable Shielding Types

Demystifying industry acronyms

Category cables are often referred to as Ethernet cables, as they are normally used for Ethernet Networks. A typical category cable is comprised of 8 conductors which are organized into 4 sets of twisted pairs. Correct twisting and cabling together of the pairs provides some protection from outside electromagnetic interference (EMI) and radio interference (RFI) as well as crosstalk between adjacent pairs and cables. Protection against all these types of interference can be further improved by designing cables with shielding layers which act as electronic protective barriers against signal degradation.

Two types of shielding are common in category cables: *Foil Shields* and *Braided Shields*. Foil shields are typically aluminumized tapes, wrapped around either the twisted pairs or as an overall shield. Braided shields are a tinned copper braid applied as an overall shield, in various degrees of coverage. Braided shields, especially with high coverage, also provide physical protection to the conductors.

We use industry standard acronyms to describe the types of shielding used in our ProPlex and Dataplex category cables. The first part of the acronym describes the overall cable shielding while the second part identifies the individual shielding for the twisted pairs.



U Unshielded **TP** Twisted Pair **F** Foil Shield **S** Braided Shield



ProPlex CAT6a - S/FTP and ProPlex CAT6a Extended Length

Each of the twisted pairs are individually shielded with aluminum foil tape, then are all shielded in an overall flexible tinned copper braid with 80% minimum coverage. Additional Kevlar strengthening yarns are added for more support. Twisted pair foil helps to reduce crosstalk from adjacent pairs and other cables.

ProPlex CAT6a S/FTP - verified 10 Gbps performance up to 85 meters
 ProPlex CAT6a Extended Length S/FTP - verified 10 Gbps performance up to 100 meters



ProPlex CAT5e Ultra - S/FTP

Each of the twisted pairs are individually shielded with aluminum foil tape, then are all shielded in an overall flexible tinned copper braid with 80% minimum coverage. Additional Kevlar strengthening yarns are added for more support. Twisted pair foil helps to reduce crosstalk from adjacent pairs and other cables and improves data integrity at longer lengths.

ProPlex CAT5e Ultra S/FTP - verified Gigabit performance up to 90 meters

Category Cable Shielding Types



ProPlex CAT5e - U/UTP

No shielding. Twisted pairs create a balanced transmission line, helping to reduce electrical noise and EMI. Additionally, different twist rates of each pair are used to reduce crosstalk. Additional Kevlar reinforcement strands are added for durability.

ProPlex CAT5e U/UTP - verified Gigabit performance up to 85 meters



ProPlex CAT5e 26AWG- SF/UTP

Twisted pairs are shielded with an overall aluminized polyester foil under a braid shield with 80% minimum coverage. The pairs are cabled together with Kevlar strengthening yarns and are separation tape wrapped. Offers effective protection from EMI both from within and into the cable as well as much better grounding due to the additional braid.

ProPlex CAT5e 26AWG SF/UTP - verified Gigabit performance up to 10 meters



Dataplex CAT6a - SF/UTP

The twisted pairs are shielded with an overall aluminized polyester foil over a braid shield with 75% minimum coverage. Twisted pairs surround a central spline and are wrapped with a foam polypropylene tape to form the cable core. Offers effective protection from EMI both from within and into the cable as well as much better grounding due to the additional braid.

Dataplex CAT6a SF/UTP - verified 10 Gbps performance up to 85 meters



Dataplex CAT5e - SF/UTP

The twisted pairs are shielded with an overall aluminized polyester foil over a braid shield with 75% minimum coverage. Twisted pairs are wrapped with a foam polypropylene tape to form the cable core. Offers effective protection from EMI both from within and into the cable as well as much better grounding due to the additional braid.

Dataplex CAT5e SF/UTP - verified Gigabit performance up to 90 meters