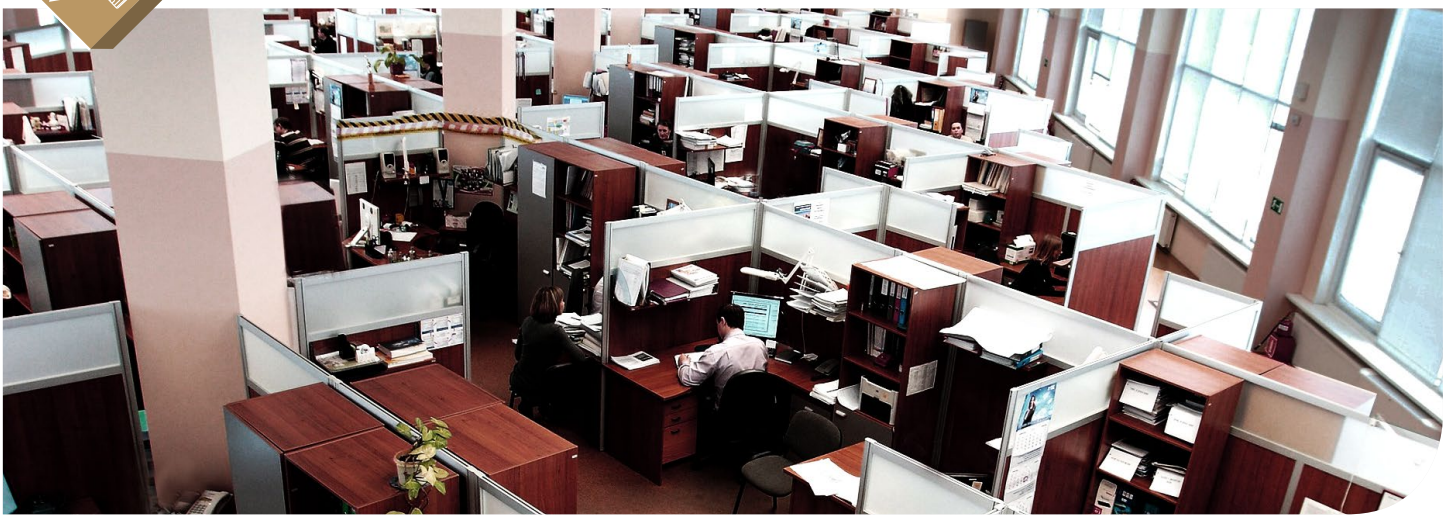
SIGNAMAX CONNECTIVITY SOLUTIONS

Tuesday's TECH TIP FOCUS:

X AWG VS Y AWG: ROLE OF A CONDUCTOR'S SIZE

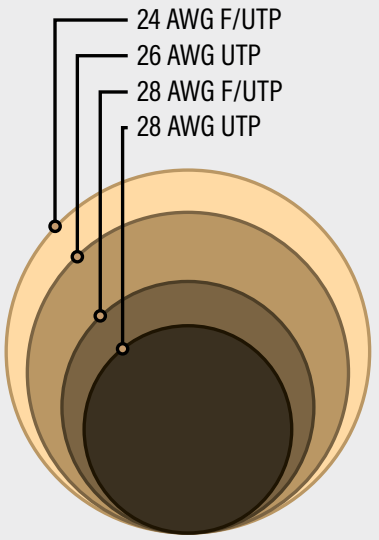


The Significant role of a Conductor's Size

Conductor size plays significant role in twisted-pair cable transmission performance, predominantly in insertion loss or cable's ability to attenuate signal and cause voltage drop in power transmission, in both cases limiting maximum distance at which cable can operate effectively. The larger the conductor diameter (lower AWG), the lower its electrical resistance and greater the operating distance.

However, in the case with cords, distance may not have such importance as cable flexibility and size/weight. Table below shows the most significant differences between cords built using different conductors:

Parameter	Solid	Stranded			
	24		26	28	
	U/UTP		F/UTP	U/UTP	F/UTP
DC Resistance (Ohm/ft)	0.025	0.03	0.04	0.07	
Typical Cable Diameter (in)	0.20	0.23	0.26	0.15	0.18
Length De-rating Factor	1.0	0.8	0.5	0.3	



Circle Diameter Ratios: 33.3/29.4/22.9/19.0

Unscreened 28-AWG cords provide certain advantage in cable size (therefore, flexibility and weight) compared to 26-AWG counterparts at expense of significant reduction in length; screened 28-AWG cords due to additional thickness of screening elements are not found that attractive. Overall, cost reduction looks like the biggest gain in switching to 28-AWG cords due to the copper content being 40% lower compared to the 26-AWG cords.

Contact our Technical Support today for any additional questions:

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