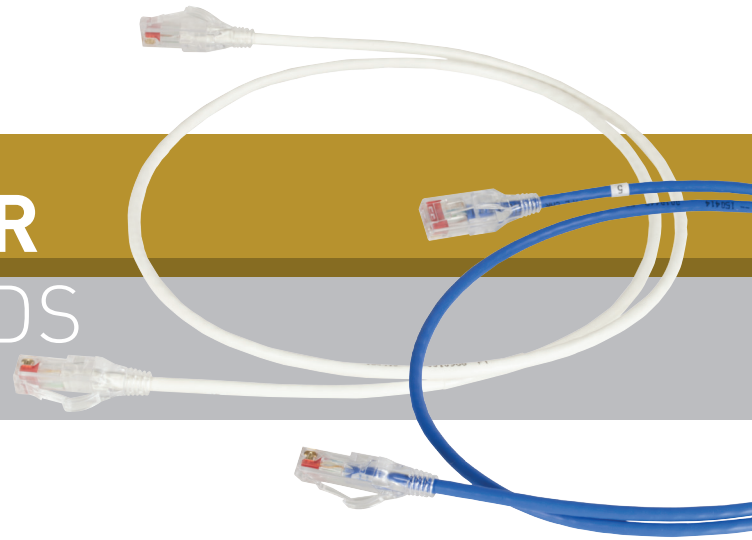# REDUCED DIAMETER
28 AWG PATCH CORDS

ADDITIONAL FACTS AND REQUIREMENTS WHEN CONSIDERING THE USE OF 28 AWG PATCH CORDS
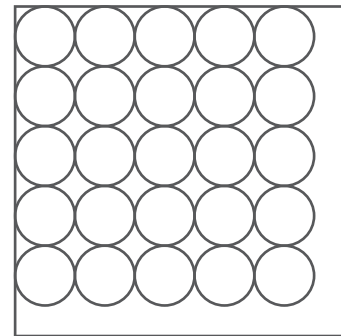
Ortronics® reduced diameter (RDC) patch cord for CAT6 applications provide a smaller cable diameter of .155" while still able to support applications up to and including 1 Gigabit Ethernet. These reduced diameter cords occupy less than 60% of the space required for MC6 cords, easily allowing over 1.6 times as many cords into the same space as MC6 cords.
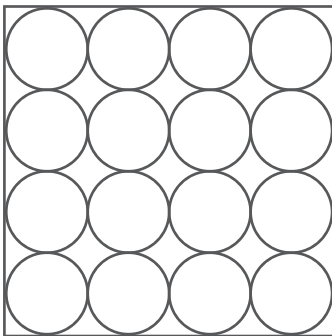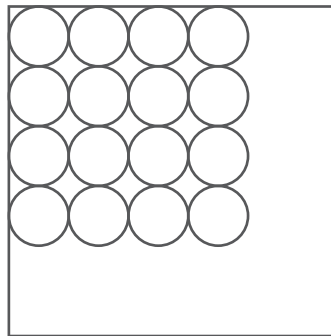
16 MC6 CORDS   **16 RDC6 CORDS**   **25 RDC6 CORDS**

This size reduction makes these cords a candidate when retrofitting existing rack or cabinet installations that are at capacity, with saturated vertical or horizontal management, or when new or additional cords need to introduced into high density scenarios. The smaller cord size can also allow more viewable space on the panels to assist with port identification and provide more space for future Moves Adds Changes (MAC).

These cords are factory tested to and pass all ANSI/TIA-568-C.2 Category 6 and ISO 11801 Class E Edition 2.1 patch cord electrical performance requirements for all frequencies from 1 to 250 MHz. These cords cannot be called CAT6 component compliant because the use of 28 AWG cordage does not meet the 22 to 26 AWG conductor size of patch cable specified in ANSI/TIA-568-C.2.

CAT6 channels that have these cords that will also pass Category 6 field testing but, because of the resulting higher attenuation of 28 AWG, a reduction to the 100 meter channel length identified in the cabling standards is necessary when these cords are used. This is called de-rating the channel length.

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REDUCED DIAMETER
28 AWG PATCH CORDS

BELOW ARE 2 SETS OF GUIDELINES THAT WILL ALLOW YOU TO DESIGN AND INSTALL HORIZONTAL CABLING USING 28 AWG PATCH CORDS AND STILL MEET ALL CATEGORY 6 CHANNEL FIELD TEST PERFORMANCE REQUIREMENTS

Supported channel lengths/configurations that include these cords are:

96 meter total channel length with a 90 meter permanent link and up to 6 meters of RDC cords.

OR

93 meter total channel length with up to 10 meters of RDC patch cords included in the channel.
(10 meters patch with 83 meters of horizontal cable)

Both of the above channel length limitations will ensure passing insertion loss which is the only concern raised by these cords in the only the longest of channels.

The above channel guidelines also support POE (IEEE 802.3af) and POE+ (IEEE 802.3at) as well as the projected POE+ + (100 watt). Guidelines identified in TSB 184 ("Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling" technical service bulletin published by TIA) recommends a maximum temperature increase of 15° for a bundle of cables operating at full PoE or PoE+ power. To address this concern with 28 AWG cords, bundle sizes should be limited if cords are expecting to support POE.

A guideline you can use in this area would be:

A maximum of (48) cords in a bound bundle for present applications for POE and POE+.

OR

(24) cords in a bound bundle when planning to support the pending POE+ +.

These guidelines do not apply to unbound cords contained in a pathway, vertical or horizontal when following normal fill guidelines.

Because of the smaller cable O.D. of RDC 28 AWG patch cords these cords are very flexible and considered easier to manage. RDC cords also have much smaller bend radius limitation of just over .6" for bend radius. Tight bend radius can help when cable routing is restrictive or in very high density applications. These features can also make these cords easier to handle for MAC routing dressing and management. Smaller cord size has also been associated with better airflow.

PRODUCT SPECIFICATIONS

- Cable 28 AWG, unshielded, 4-twisted pair, stranded copper
- Cable diameter: 0.155" Max O.D., .150" Nom O.D.
- High performance modular plugs ANSI/TIA/EIA-1096-A and IEC 60603-7; contacts plated with 50 micro inches of gold plated phosphor bronze plug contacts
- ROHS compliant
- Cord lengths up to 25' for design flexibility (stock lengths, 3',5',7',9',10' and 15')
- Meets IEEE 802.3af and IEEE 802.3at for PoE applications (reference listed maximum bundle sizes)

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