COMMSCOPE®

Design Guide

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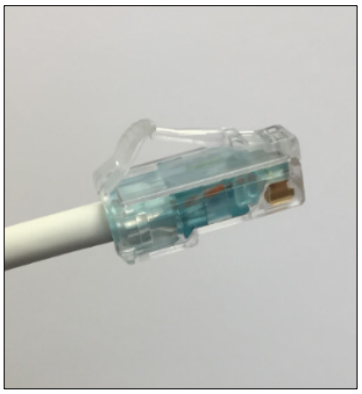
Reduced-Diameter Cat 6A (MiNo6A) Patch Cords

1. Introduction



MiNo6A ("Minnow Six A") is a small diameter patch cord, delivering Category 6A/Class E_A performance in a U/UTP design. Building upon CommScope's cable engineering knowledge, MiNo6A utilizes 28-AWG solid conductors resulting in a core with maximum flexibility and performance for Cat 6A applications.

MiNo6A patch cords support Category 6A/Class EA channel applications and can be used in channels with SYSTIMAX® GigaSPEED X10D® and UniPrise® Ultra 10G®, as well as SYSTIMAX® GigaSPEED XL®, UniPrise® UltraMedia®, Media 6® and NETCONNECT® components. CommScope has tested and characterized MiNo6A performance in numerous channel configurations and guarantees Category 6A level performance.

MiNo6A features an efficient patented plug design featuring an anti-snag release, and a low-profile rear housing. The plug is designed to ensure precise control of the conductors, reduce variation, and maximize performance. MiNo6A cords are easily distinguished from MiNo6 cords by their aqua-colored internal plug components.

MiNo6A is designed to provide extended performance for data center applications, and may also be used as a patch cord for equipment, cross-connects, and at workstations.

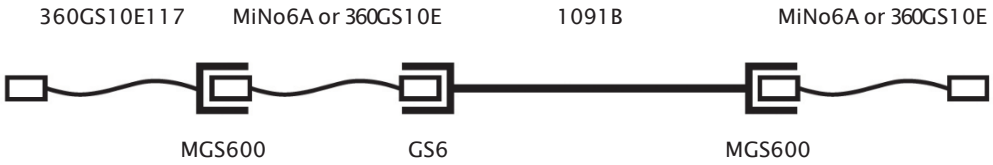
Features and Benefits	
Electrical performance:	ANSI/TIA-568.2-D Category 6A / ISO 11801 Class E_A Performance Compliant.
	Meets or exceeds all ANSI/TIA-568.2-D Category 6A and ISO 11801 Class E_A patch cord‡ and channel transmission performance requirements.
	Meets IEC 60603-7
	PoE: Supports IEEE 802.3af, 802.3at, and 802.3bt requirements
Mechanical features:	Nominal cable diameter (DOJ): 0.195" (4.95 mm)
	Flammability rating: Dual Rated CM/LSZH (Low Smoke Zero Halogen)
	Operating temperature: 14°F to 140°F (-10°C to 60°C)
	Storage temperature: -40°F to 158°F (-40°C to 70°C)
	Compatible with SYSTIMAX® SecureMAX™ Lock for increased physical security
	Supported by CommScope's signature cable assembly configurator. Available in various colors, and in 1-foot / 1-meter increments.
	Available in bulk packs of 10 and 100.
Compliance:	Safety compliance: ETL Listed; UL 1863 and CAN/CSA-C22.2 (ETL File 3166536CRT-001)
	RoHS compliant
	Supports 750 mating cycles
	100 percent tested for wire map and high-voltage breakdown.

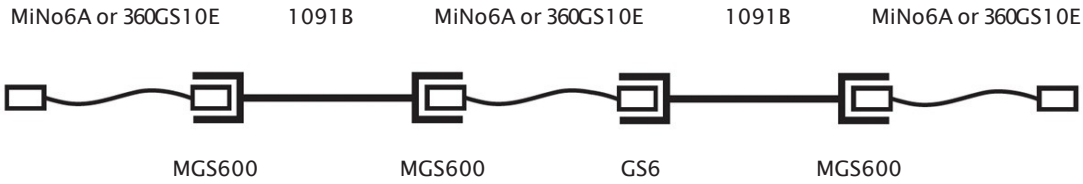
‡ TIA recommends limiting the length of cordage in a channel to 15 meters. For lengths from 15 meters to 40 meters MiNo6A supports channel performance requirements when used in a point-to-point application (direct attach/top-of-rack). Patch cords longer than 10 meters support channel performance but are not guaranteed to meet cord component requirements.

Consult a CommScope field application engineer if Type 4 power sourcing equipment (PSE) is deployed. CommScope recommends limiting bundle sizes to 12 cables with a minimum spacing between bundles of 1.5 inches.

2. MiNo6A channel configurations

MiNo6A cords utilize 28-AWG conductors, are not available as single-ended components, and are not suitable to be cut and terminated to an outlet; as such, configurations are limited. These cords may be substituted into any conventional full cord position – for example, the following SYSTIMAX channels with GigaSPEED X10D® cabling:





3. Length (de-rating) guidelines

The 28-AWG cordage of MiNo6A cords is insertion loss de-rated by 90 percent, in contrast to the 20 percent de-rating of conventional cordage. ANSI/TIA-568.2-D and ISO 11801 specify insertion loss de-rating differently.

ANSI/TIA-568.2-D provides a method for determining the maximum cordage length (P) for a given horizontal cable length (H) using a fractional de-rating factor (D), while ISO 11801 calculates the maximum horizontal length for a given total cordage length (F) using a loss factor (X). The results are similar with the ANSI/TIA-568.2-D spec being the more restrictive of the two. An example of the calculation for each standard is shown in the tables below.

Though TIA recommends that no more than 15 meters of 28 AWG cordage be used in a channel, CommScope testing has shown that MiNo6A cords are compliant to Category 6A performance requirements in lengths of up to 40 meters when used in direct attach applications.

TIA cord length from horizontal length (H)		
$P \leq (102-H)/D$		
	24 AWG	MiNo6A
	D=1.2	D=1.9
90.0	10.0	6.3
88.0	11.7	7.4
86.0	13.3	8.4
84.0	15.0	9.5
82.0	16.7	10.5
80.0	18.3	11.6
78.0	20.0	12.6
76.0	21.7	13.7
74.0	23.3	14.7

ISO cord length from horizontal length (H)		
$F \leq (103 - H)/X$		
	24 AWG	MiNo6A
	X=1.2	X=1.9
90.0	10.8	6.8
88.0	12.5	7.9
86.0	14.2	8.9
84.0	15.8	10.0
82.0	17.5	11.1
80.0	19.2	12.1
78.0	20.8	13.2
76.0	22.5	14.2
74.0	24.2	15.3

ISO 11801 also has a mixed de-rating calculation when using cords of both types with a second cordage length (C) and second de-rating (Y):

$$H = 103 - F * X - C * Y$$

For example, with a five-meter 360GS10E cord and two three-meter MiNo6A cords, the maximum horizontal length = 103 - (1.2*5) - (1.9*6) = 85.6 meters.

4. Contact information

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