Ordering and design guidelines for reduced-diameter patch cords (MiNo6)

Introduction

The MiNo6 ("Minnow Six") is a small diameter patch cord, delivering Category 6/ Class E performance while utilizing a true unshielded twisted pair (U/UTP) design. Building upon CommScope's cable engineering knowledge, MiNo6 utilizes 28-AWG stranded conductors and is designed to provide maximum performance, flexibility and durability in a reduced diameter design.

The MiNo6 patch cord supports CommScope's Category 6/Class E channel applications and can be used in channels with SYSTIMAX® GigaSPEED XL®, UniPrise® UltraMedia® or Media 6® cables and NETCONNECT. CommScope has tested and characterized the MiNo6's performance in various channel configurations and guarantees Category level performance.

The MiNo6 features a highly-engineered, unique, patented plug design. The plug precisely controls termination, resulting in consistent and superior performance. A compact crimp ring ensures secure and reliable contact between cable jacket and plug, also allowing for a low profile on the rear of the plug housing. MiNo6 features brightly-colored subcomponents and an anti-snag latch that enhances the user experience in field identification and deployment.

MiNo6 is designed to be used as a patch cord for equipment, cross-connect, or workstation.

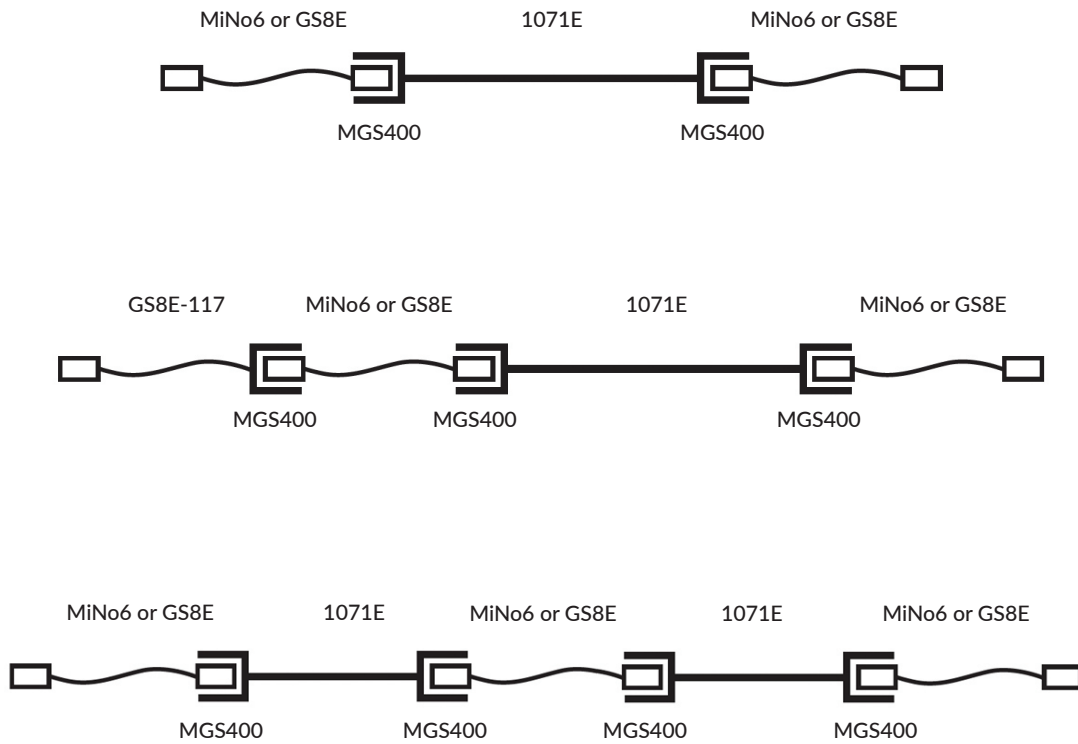| Features and Benefits	
Electrical performance:	ANSI/TIA-568-C.2 Category 6 / ISO 11801 Class E Performance Compliant*.
	Meets or exceeds all ANSI/TIA-568-C.2 Category 6 and ISO 11801 Class E patch cord‡ and channel transmission performance requirements.
	IEC compliance: Meets IEC 60603-7
	Supports IEEE 802.3af, 802.3at and proposed 802.3bt# PoE applications.
Mechanical features:	Nominal cable diameter (DOJ): 0.151" (3.84 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 and available in various colors and length in 1 foot/1 meter increments.
	Available in bulk pack of 10 and 100 pieces.
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.

* 28-AWG cordage is outside the scope of established standards, but offered for reduced congestion in high-density installations.
‡ Limited to 10 meter cord lengths. Contact CommScope if longer lengths are required.
# Consult a CommScope field application engineer if Type 4 power sourcing equipment (PSE) is deployed.

MiNo6 channel configurations

MiNo6 cords are 28-AWG and are not available as single-ended components. Similarly, they are not suitable for cutting and outlet termination; as such, configurations are limited. MiNo6 cords may be substituted into any conventional full cord position – for example, the following SYSTIMAX channels with GigaSPEED XL cabling:

MiNo6 or GS8E　　　　1071E　　　MiNo6 or GS8E

MGS400　　　　　　　MGS400

GS8E-117　　MiNo6 or GS8E　　　　1071E　　　　MiNo6 or GS8E

MGS400　　　MGS400　　　　　　MGS400

MiNo6 or GS8E　　　1071E　　MiNo6 or GS8E　　　1071E　　MiNo6 or GS8E

MGS400　　　MGS400　　　MGS400　　　MGS400

Length (de-rating) guidelines

The 28-AWG cordage of MiNo6 cords are insertion loss de-rated by 90 percent, in contrast to 20 percent de-rating of conventional cordage. ANSI/TIA-568-C.2 and ISO 11801 specify insertion loss de-rating differently. ANSI/TIA-568-C.2 calculates a maximum cord length (C) 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 cord length (F) using a loss factor (X). The results are not exactly the same, but either calculation may be used for MiNo6 applications support. Up to 32.6 total meters of MiNo6 cordage meets Category 6/Class E channel performance specifications, using either of the following calculations (in meters):

TIA de-rating from horizontal length (H)		
$C \le (102-H)/(1+D)$		
	24-AWG	MiNo6
H	D=0.2	D=0.9
90.0	10.0	6.3
80.0	18.3	11.6
70.0	26.7	16.8
60.0	35.0	22.1
50.0	43.3	27.4
40.0	51.7	32.6

ISO de-rating from cord length (F)		
$H \le 103 - F*X$		
	24-AWG	MiNo6
F	X=1.2	X=1.9
10.0	91.0	84.0
15.0	85.0	74.5
20.0	79.0	65.0
25.0	73.0	55.5
30.0	67.0	46.0

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

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

For example, with a five-meter GS8E cord and two three-meter MiNo6 cords, the maximum horizontal length = 103 - (1.2*5) - (1.9*6) = 85.6 meters.

Ordering Information

Base code	Product number	Detailed Description	Jacket color										UOM	Cable/cordage length
			BK	LB	DG	GN	OR	RD	WH	YL	PK	BL		
CO166S2	MiNo6-L	MiNo6-L Category 6 CM/LSZH modular patch cord		2	3				8	9			F/M	3-33 feet / 1-10 meters
BO166S2	MiNo6-L-10PK	CO166S2 (pack of 10) MiNo6-L-10PK												3-33 feet / 1-10 meters
KO166S2	MiNo6-L-MEGAPACK	CO166S2 (pack of 100) MiNo6-L-MEGAPACK												3-33 feet / 1-10 meters

Cord color options: 1=BK (black), 2=LB (light blue), 3=DG (dark gray), 4=GN (spring/lime green), 6=OR (orange), 7=RD (red), 8=WH (white), 9=YL (yellow) K=PK (pink), Z=BL (blue).