HellermannTyton



Category 6A Shielded HD Patch Leads

28AWG F/UTP

Product Description

HellermannTyton's Cat6A High Density patch leads are designed for high-performance networking in 10-Gigabit Ethernet applications, supporting frequencies from 1 to 500 MHz. Manufactured to meet and exceed ISO/IEC 11801, ANSI/TIA-568.2-D, and EN 50173 standards, they ensure superior signal integrity and compliance with structured cabling requirements.

These patch leads are optimise for high-density patching, with an ultra-slim 4.7mm outer diameter that reduces congestion and improves airflow in network cabinets lowering patch lead density by up to 25% in a standard 1U 24-port patch panel.

Shielded patch leads are ideal for use in data centres, enterprise networks, broadcast environments, and other high-speed data transmission applications requiring robust performance and minimal crosstalk.

Design Limitations

Cat6A 28AWG patch leads offer advantages in high-density environments due to their reduced diameter, but they also introduce certain network design and usage limitations compared to standard 24AWG patch leads. The key difference lies in their electrical properties, particularly higher insertion loss (signal attenuation) due to the thinner conductor size.

The smaller 28AWG conductors have higher resistance per unit length, leading to greater signal loss compared to 24AWG cables.

To compensate for this increased attenuation, shorter maximum cable lengths must be observed in network designs.

HellermannTyton recommends reducing the Permanent link to 83m where 10m of 28AWG patch leads are used(5m + 5m), creating a maximum channel link of 93m. For Channels using 15m (7.5m + 7.5m) of 28AWG patch leads a maximum permanent link distance of 78m should be used, giving a maximum channel length of 93m.

Where PoE applications are required installations should implement bundle size and separation protocols as outlined in ISO/IEC TS 29125, CENELEC EN 50174-99-1 or TIA TSB-184-A.

Design Specification Document

High-Density Patch leads shall meet or exceed the electrical transmission performance requirements for links and channels as defined in: EN 50173-1 (Class EA), ISO/IEC 11801-1 (Class EA), ANSI/TIA-568.2-D (Category 6A).

The patch leads shall be manufactured by HellermannTyton and constructed from 28 AWG, shielded F/UTP, twisted pair, stranded conductor with a standard 8-position modular RJ45 plug and transparent snag-free strain relief boots on both ends.

Plug contacts shall be plated with a minimum of 50 micron (μ) of gold for reliable connectivity. Patch leads shall have a nominal outer diameter (OD) of 4.7mm to support high-density patching applications.

The patch leads shall be available in Black, Blue, Green, Grey, Red, Yellow and White to support diverse identification.



Category 6A Shielded HD Patch Leads.

Applications

- Enterprise / Premise Cabling
- Data Centre Cabling
- Telecoms
- Data, Voice & Video
- High-speed Networks
- Environments with EMI/RFI

Features & Benefits

- **10-Gigabit Performance:** Supports high-speed data transmission at frequencies from 1 to 500 MHz.
- **Compact Design:** Slim 4.7mm outer diameter reduces cable bulk and improves airflow.
- **High-Density Patching:** Reduces patch lead density by up to 25% in standard 1U 24-port patch panels.
- Shielded (F/UTP) Construction: Provides superior protection against EMI and crosstalk for reliable signal integrity.
- **Standards Compliance:** Meets or exceeds ISO/IEC 11801, ANSI/ TIA-568.2-D, and EN 50173 requirements.
- **Future-Proof Investment:** Complies with industry standards, ensuring compatibility with modern and evolving network infrastructures.

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Electrical and Performance Specifications

Specifications	Value
Cable Type	Cat6a (F/UTP)
Conductor Size	28AWG (stranded Copper)
Frequency Rating	Up to 500 MHz
Maximum Data Rate	10Gbps (10GBASE-T)
Nominal Outer Diameter (OD)	4.7mm (±0.2mm)
Plug Type	RJ45, 50µ" Gold-Plated Contacts
Wire Configuration	4-Pair Twisted
Wiring Standard	T568B as standard, custom configurations available upon requests
Insulation Material	LSZH

Mechanical Properties

Parameter	Value
Bend Radius	4x Cable Diameter (18.8mm)
Flexibility	High, suitable for tight spaces
Insertion Force	<20N (stand RJ45 Plug)
Retirement Life	>785 Insertions

Maximum Channel Length Adjustments

Patch Lead Type	Patch Lead Length	Permanent Link Length	Total Channel Length	
24AWG Patch Leads	10m (5m each end)	90m	100m (standard)	
29 AVA/C Datch Lands	10m (5m each end)	83m	02	
ZOAVVO FALCII LEAUS	15m (7.5m each end)	78m	11126	

PoE Power Delivery

Technical Data Sheet

PoE Standard Support	IEEE 802.3af (PoE), 802.3at (PoE+), 802.3bt (PoE++)
Maximum Power	Up to 100W (PoE Type 4) with bundle size limitations
DC Resistance	~16.5Ω per 100m
Temperature Rise Considerations	Requires reduced bundle size and spacing for high-power PoE

Part Numbers

th (m)	BLACK		BLUE		GREEN		GREY	
Lengt	UNS	Part Code						
0.2	851-30239	RJ45SPC6A-0.20M/BK	851-30252	RJ45SPC6A-0.20M/BL	851-30265	RJ45SPC6A-0.20M/GN	851-30278	RJ45SPC6A-0.20M/GY
0.3	851-30240	RJ45SPC6A-0.30M/BK	851-30253	RJ45SPC6A-0.30M/BL	851-30266	RJ45SPC6A-0.30M/GN	851-30279	RJ45SPC6A-0.30M/GY
0.5	851-30241	RJ45SPC6A-0.50M/BK	851-30254	RJ45SPC6A-0.50M/BL	851-30267	RJ45SPC6A-0.50M/GN	851-30280	RJ45SPC6A-0.50M/GY
1	851-30242	RJ45SPC6A-01.0M/BK	851-30255	RJ45SPC6A-01.0M/BL	851-30268	RJ45SPC6A-01.0M/GN	851-30281	RJ45SPC6A-01.0M/GY
2	851-30243	RJ45SPC6A-02.0M/BK	851-30256	RJ45SPC6A-02.0M/BL	851-30269	RJ45SPC6A-02.0M/GN	851-30282	RJ45SPC6A-02.0M/GY
3	851-30244	RJ45SPC6A-03.0M/BK	851-30257	RJ45SPC6A-03.0M/BL	851-30270	RJ45SPC6A-03.0M/GN	851-30283	RJ45SPC6A-03.0M/GY
5	851-30246	RJ45SPC6A-05.0M/BK	851-30259	RJ45SPC6A-05.0M/BL	851-30272	RJ45SPC6A-05.0M/GN	851-30285	RJ45SPC6A-05.0M/GY
7	851-30248	RJ45SPC6A-07.0M/BK	851-30261	RJ45SPC6A-07.0M/BL	851-30274	RJ45SPC6A-07.0M/GN	851-30287	RJ45SPC6A-07.0M/GY
10	851-30251	RJ45SPC6A-10.0M/BK	851-30264	RJ45SPC6A-10.0M/BL	851-30277	RJ45SPC6A-10.0M/GN	851-30290	RJ45SPC6A-10.0M/GY

th (m)		RED		YELLOW	WHITE		
Lengt	UNS	Part Code	UNS	Part Code	UNS	Part Code	
0.2	851-30291	RJ45SPC6A-0.20M/RD	851-30304	RJ45SPC6A-0.20M/YW	851-30317	RJ45SPC6A-0.20M/WH	
0.3	851-30292	RJ45SPC6A-0.30M/RD	851-30305	RJ45SPC6A-0.30M/YW	851-30318	RJ45SPC6A-0.30M/WH	
0.5	851-30293	RJ45SPC6A-0.50M/RD	851-30306	RJ45SPC6A-0.50M/YW	851-30319	RJ45SPC6A-0.50M/WH	
1	851-30294	RJ45SPC6A-01.0M/RD	851-30307	RJ45SPC6A-01.0M/YW	851-30320	RJ45SPC6A-01.0M/WH	
2	851-30295	RJ45SPC6A-02.0M/RD	851-30308	RJ45SPC6A-02.0M/YW	851-30321	RJ45SPC6A-02.0M/WH	
3	851-30296	RJ45SPC6A-03.0M/RD	851-30309	RJ45SPC6A-03.0M/YW	851-30322	RJ45SPC6A-03.0M/WH	
5	851-30298	RJ45SPC6A-05.0M/RD	851-30311	RJ45SPC6A-05.0M/YW	851-30324	RJ45SPC6A-05.0M/WH	
7	851-30300	RJ45SPC6A-07.0M/RD	851-30313	RJ45SPC6A-07.0M/YW	851-30326	RJ45SPC6A-07.0M/WH	
10	851-30303	RJ45SPC6A-10.0M/RD	851-30316	RJ45SPC6A-10.0M/YW	851-30329	RJ45SPC6A-10.0M/WH	

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