

Part Number: PL-RJ45F6

PLANET PL-RJ45F6 is a shielded 8P8C RJ45 modular plug for termination of compatible Category 6 and Category 6A FTP copper network cables and patch leads. The metallic shield shell provides a conductive path for the cable screen when correctly terminated, helping maintain shielding continuity and reduce susceptibility to EMI/RFI in shielded structured-cabling channels.

The enhanced PLANET configuration uses 15 µin hard-gold plating on the RJ45 contact area as standard, with 30 µin and 50 µin available as optional upgrades. Category 6 performance up to 250 MHz is the baseline claim; Category 6A / 500 MHz / 10GBASE-T performance must be supported by verified connector or channel test evidence for the actual cable-and-plug combination.

FTP Shielded Plug	15 µin Gold Standard	8P8C RJ45 Interface	CAT6/6A Cable Compatibility
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"Shielded Connectivity. Reliable Contact. Professional Performance."

1. General Description

PLANET PL-RJ45F6 is a shielded RJ45 male modular plug intended for crimp termination on compatible four-pair FTP copper cable. The connector combines a transparent polycarbonate inner body, metallic shielding shell, 8P8C contact interface and conductor-management insert/load-bar style termination. Correct termination of the cable foil/drain arrangement to the connector shield is required to preserve shielding continuity through the channel.



CAT6/6A FTP RJ45 Connector - Annotated 3D View

2. Construction

Parameter	Specification
Product Type	Category 6 / Category 6A compatible shielded RJ45 modular plug
Part Number	PL-RJ45F6
Interface	RJ45 / 8P8C male modular plug, shielded
Inner Housing	Transparent polycarbonate
Shielding	Metallic shield shell for FTP cable-screen continuity
Contact System	8 copper-alloy blade contacts with gold-plated mating area
Gold Contact Plating	15 µin hard gold standard; 30 µin and 50 µin optional
Termination	Crimp termination with conductor-management insert / load bar
Cable Compatibility	Cat.6 / Cat.6A FTP shielded copper cable; conductor and insulation dimensions must match plug geometry
Wiring Scheme	T568A or T568B according to cable assembly requirement

TECHNICAL SPECIFICATIONS

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3. Electrical Characteristics

Parameter	Specification
Baseline Frequency Performance	Category 6 application up to 250 MHz
Cat.6A Performance	Up to 500 MHz / 10GBASE-T only when supported by verified component or channel test evidence
Characteristic Interface	100 Ω balanced twisted-pair Ethernet channel interface
Insulation Resistance	Target ≥ 500 MΩ; production verification required
Contact Resistance	Target ≤ 20 mΩ; production verification required
Shield Continuity	Conductive cable-screen-to-plug-shell path when correctly terminated
Remote Powering: PoE / PoE+ / 4-Pair PoE subject to qualified cable and channel design	

4. Mechanical Characteristics

Parameter	Value
Base Durability	200 mating cycles (manufacturer-family baseline; confirm on PL-RJ45F6 production lot)
Enhanced Durability Option	≥ 750 mating cycles, subject to qualified production and supporting test evidence
Housing Material	Transparent polycarbonate with metallic shielding shell
Termination Method	Crimp plug with conductor-management insert / load bar
Recommended Conductor Range	Typically 23-26 AWG solid or stranded copper, subject to plug dimensional compatibility

5. Technical Performance

PL-RJ45F6 is designated for Category 6 / Category 6A FTP cable termination. To avoid overstating compliance, this datasheet treats Category 6 / 250 MHz as the baseline verified-performance target. Category 6A / Class EA / 500 MHz and 10GBASE-T claims require component-level or installed-channel test evidence for the actual plug, cable construction and termination method.

Performance Item	Requirement	Performance Item	Requirement	Application	Requirement	Status
Baseline Frequency	1-250 MHz	Insertion Loss / NEXT	Cat.6 compliant when verified	1000BASE-T	Supported	Baseline
Shield Continuity	End-to-end conductive path	Return Loss	Cat.6 compliant when verified	10GBASE-T	Verification required	Conditional
Cat.6A Frequency	Up to 500 MHz*	Alien Crosstalk / Balance	Project test evidence required	PoE / PoE+ / 4PPoE	Supported**	Application
Wire Map	8P8C correct	Contact Continuity	Production verified	T568A / T568B	Supported	QA

* Category 6A / 500 MHz / 10GBASE-T is not established by cable compatibility or metal shielding alone; verified component/channel performance is required. ** Remote powering depends on conductor size, contact resistance, crimp quality, bundle temperature and installed-channel design.

APPLICATIONS, FEATURES & COMPLIANCE

CAT6/6A FTP RJ45 | PL-RJ45F6

6. Applications

- Category 6 / Category 6A FTP cable termination
- Shielded Gigabit Ethernet networks
- Enterprise, commercial and data-center connectivity
- IP CCTV, VoIP and wireless access-point connections
- Patch-lead and shielded cable assembly production
- EMI/RFI-sensitive installations using properly bonded shielded channels
- PoE-powered network devices subject to qualified remote-power design

7. Transmission & Shielding Performance

- Category 6 baseline application performance up to 250 MHz when correctly terminated
- Category 6A / 500 MHz / 10GBASE-T support requires verified component or channel test evidence
- Metallic shield shell supports cable-screen continuity and improved EMI/RFI immunity
- Shielding effectiveness depends on correct cable preparation, shield bonding, crimping and grounded compatible equipment

8. Key Features

- 8P8C shielded RJ45 modular plug for FTP copper cabling
- 15 µin hard-gold contact plating as standard
- 30 µin and 50 µin hard-gold plating available as optional upgrades
- Transparent polycarbonate inner housing with metallic shield shell
- Crimp termination with conductor-management insert / load bar
- Designed to maintain shield continuity when correctly terminated to compatible FTP cable
- Category 6 / Category 6A cable compatibility with controlled, evidence-based performance claims

9. Standards Compliance

Standard / Certification	Status
ANSI/TIA-568.2-E	Category 6 baseline; Category 6A performance subject to verified test evidence
ISO/IEC 11801-1	Class E baseline; Class EA support subject to verified test evidence
IEC 60603-7-5	Reference for 8-way shielded Category 6 connectors up to 250 MHz
IEC 60603-7-51	Reference for 8-way shielded Category 6A connectors up to 500 MHz when verified
IEEE 802.3 Ethernet / PoE	Application support subject to compliant channel and remote-power design
RoHS / REACH	Subject to applicable production declarations

QUALITY, OPTIONS & WARRANTY

PL-RJ45F6 | CAT6/6A FTP RJ45

10. Quality Assurance

Manufactured under controlled quality procedures to ensure:

- Consistent contact alignment, crimp geometry and conductor positioning
- Reliable metallic shield fit and cable-screen continuity
- Controlled hard-gold plating thickness according to the ordered configuration

Validation: Production inspection should include housing and shield integrity, contact position, insert/load-bar fit, crimp quality, shield-continuity check, plating-thickness verification, dimensional inspection, and terminated-sample continuity / wire-map testing. Category 6A / 500 MHz or 10GBASE-T claims should only be used when supported by the applicable component or channel test report.

11. Gold Plating Options

- Standard: 15 µin (0.38 µm) hard gold over nickel on the RJ45 mating contact area
- Optional upgrade: 30 µin (0.76 µm) hard gold over nickel
- Premium option: 50 µin (1.27 µm) hard gold over nickel
- Increased gold thickness improves corrosion resistance and contact-surface durability but does not by itself establish Category 6A transmission compliance

12. Warranty

25-Year System Warranty

Subject to proper installation, use of approved PLANET system components and applicable warranty terms.

Packing

BOX	100 PCS
Carton	100 Box