

Part Number: PL-ILRJ61

PLANET PL-ILRJ61 is a Category 6 unshielded RJ45 in-line coupler designed to join two standard RJ45 patch cords or extend an existing copper Ethernet connection. The passive female-to-female block-style design provides straight-through 8P8C connectivity in a compact housing for structured-cabling and network-extension applications.

The enhanced PLANET specification uses 15 µin gold-plated mating contacts as standard, with 30 µin and 50 µin available as optional upgrades. Performance is specified for Category 6 / Class E applications up to 250 MHz; higher-speed application claims depend on the complete installed channel and supporting verification.

CAT6
250 MHz

RJ45-RJ45
Female / Female

15 µin
Gold Standard

1:1
Straight-Through

"Simple Extension. Controlled Performance. Reliable Connectivity."

1. General Description

PL-ILRJ61 is a passive unshielded Category 6 in-line coupler with two RJ45 8P8C female interfaces connected pin-for-pin. It is intended for joining two pre-terminated patch cords or extending an existing RJ45 network link without re-terminating the cables. Straight-through mapping preserves pins 1 through 8 and is compatible with patch cords terminated to either T568A or T568B when the overall channel is wired consistently.

HOUSING

- High-impact unshielded thermoplastic
- Compact RJ45-to-RJ45 block style

RJ45 FEMALE PORT B

- Second 8P8C female interface
- Straight-through pin mapping

RJ45 FEMALE PORT A

- Standard 8P8C interface
- Accepts standard RJ45 plug

INTERNAL CONNECTION

- Passive 1-to-1 interconnection
- Maintains pair continuity

CONTACT SYSTEM

- Phosphor-bronze spring contacts
- 15 µin gold standard
- 30 / 50 µin optional

Internal 8P8C Straight-Through Contact Path (1-to-1)



Pins 1→1, 2→2 ... 8→8



PL-ILRJ61 | CAT6 U/UTP In-Line Coupler | Realistic Annotated Construction View

CAT6 U/UTP In-Line Coupler Construction - Realistic Annotated View

2. Construction

Parameter	Specification
Product Type	Category 6 U/UTP In-Line Coupler
Part Number	PL-ILRJ61
Interface	2 × RJ45 8P8C female ports, unshielded
Connection Type	Passive female-to-female straight-through coupler
Pin Mapping	1-to-1 straight-through: 1→1, 2→2 ... 8→8
Housing	High-impact engineering thermoplastic, block style
Contact Material	Phosphor bronze / copper-alloy spring contacts over nickel
Gold Contact Plating	15 µin standard; 30 µin and 50 µin optional
Internal Interconnection	Straight-through 8P8C contact carrier / PCB architecture
Compatibility	Standard RJ45 plugs on Cat.5e / Cat.6 patch cords; Category 6 channel performance when correctly installed

TECHNICAL SPECIFICATIONS

CAT6 U/UTP IN-LINE COUPLER | PL-ILRJ61

3. Electrical Characteristics

Parameter	Specification
Frequency Range	1–250 MHz
System Impedance	100 Ω balanced cabling system interface
Contact Resistance	≤ 20 mΩ design target; qualification evidence required
Insulation Resistance	≥ 500 MΩ design target; qualification evidence required
Dielectric Withstand	Up to 1,000 V AC design target, subject to qualified production test
Remote Powering	PoE / PoE+ / 4-Pair PoE pass-through subject to compliant channel design, contact resistance and thermal verification

Pin Configuration: 8P8C per port; straight-through 1:1 mapping

4. Mechanical Characteristics

Parameter	Value
Mating Durability	≥ 750 mating cycles target, subject to IEC qualification evidence
Plug Retention	Professional RJ45 retention performance; qualified sample test recommended
Housing Type	Compact unshielded block-style enclosure
Operating Temperature	-10°C to +60°C typical design range
Storage Temperature	-40°C to +70°C typical design range

5. Technical Performance

The coupler is specified as a passive Category 6 connection component for use within a compliant Class E / Category 6 channel. The installed channel remains subject to total channel length, connector count, patch-cord performance and workmanship. The coupler should not be represented as "Category 6e" because Category 6e is not a recognized TIA cabling category.

Performance Item	Requirement	Performance Item	Requirement	Application	Requirement	Status
Frequency	1–250 MHz	Insertion Loss / NEXT	Category 6 compliant when verified	1000BASE-T	Supported	Baseline
Return Loss	Category 6 compliant	Wire Map	1-to-1 straight-through	10/100BASE-T	Supported	Baseline
Channel Class	Class E / Cat6	Pair Continuity	All 4 pairs	PoE / PoE+	Pass-through*	Application
Mating Interface	RJ45 8P8C	Contact Integrity	100% continuity test	4-Pair PoE	Pass-through*	Conditional

* Remote-power support depends on the complete cable/coupler/channel design, contact resistance, temperature rise and applicable PoE installation limits.

APPLICATIONS, FEATURES & COMPLIANCE

CAT6 U/UTP COUPLER | PL-ILRJ61

6. Applications

- Joining two RJ45 Category 6 patch cords
- Extending an existing Ethernet patch connection
- Network cabinets, work areas and telecommunications rooms
- Enterprise and commercial LAN connections
- IP CCTV, VoIP and wireless access-point links
- Temporary or service-extension network connections
- PoE-powered devices where the installed channel is verified for remote power

7. Transmission Performance

- Category 6 performance up to 250 MHz when used in a compliant channel
- Supports 10/100/1000BASE-T Ethernet applications
- Low-profile passive extension with no active electronics
- Straight-through 1-to-1 pin mapping preserves pair continuity

8. Key Features

- RJ45 female-to-female 8P8C unshielded in-line coupler
- 15 µin hard-gold mating contact plating as standard
- 30 µin and 50 µin gold-plating options for enhanced contact durability
- Compact block-style construction for quick patch-cord extension
- Straight-through pin mapping compatible with T568A- or T568B-terminated patch cords
- High-impact engineering thermoplastic housing
- 100% continuity / wire-map inspection recommended for production quality assurance

9. Standards Compliance

Standard / Certification	Status
ANSI/TIA-568.2-E	Category 6 balanced twisted-pair component/channel reference
ISO/IEC 11801-1	Class E generic cabling system reference
IEC 60603-7-4	8-way unshielded connector reference for Category 6 up to 250 MHz
IEEE 802.3ab	1000BASE-T application support in a compliant Category 6 channel
IEEE 802.3af / 802.3at / 802.3bt	Remote-power application subject to qualified installed-channel design
RoHS / REACH	Subject to applicable production declaration / certification

QUALITY, OPTIONS & WARRANTY	PL-ILRJ61 CAT6 U/UTP IN-LINE COUPLER
--	---

10. Quality Assurance

Manufactured under controlled quality procedures to ensure:

- Consistent 8P8C contact alignment and straight-through pin mapping
- Stable RJ45 plug retention and housing integrity
- Controlled gold-plating thickness according to the ordered configuration

Validation: Production inspection should include visual/mechanical checks, contact alignment, 100% continuity and wire-map testing, mating-fit inspection, plating-thickness verification and representative Category 6 transmission testing. Formal third-party or laboratory evidence should be provided when required by the consultant or tender specification.

11. Gold Plating & Product Options

- Standard contact plating: 15 µin (0.38 µm) hard gold over nickel
- Optional contact plating: 30 µin (0.76 µm) hard gold over nickel
- Premium contact plating: 50 µin (1.27 µm) hard gold over nickel
- Color / packaging / higher durability qualification may be offered subject to order confirmation and supporting production evidence

12. Warranty

25-Year System Warranty	Subject to proper installation, use within an approved PLANET structured cabling system and applicable warranty terms.
--------------------------------	--

Packing 1pc / PE bag

BOX	50 PCS
Carton	500 PCS