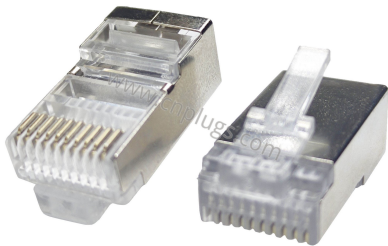


Industrial & Inverter RJ45 Plugs

10P10C RJ50 Industrial Modular Connector Plug for Automation & Communication Cables



Key specifications

Connector Interface	RJ50 (10 Positions / 10 Contacts - 10P10C)
Housing Material	Transparent polycarbonate (PC)
Contact Material	Phosphor Bronze with 50u" Gold Plating over Nickel
Compatible Cable Types	10-Conductor Round or Flat Cables (Solid & Stranded)

Product summary

- **High-Density 10P10C Configuration:** Designed with 10 positions and 10 contacts (RJ50 format) specifically tailored for complex industrial circuitry and multi-wire communication systems.
- **Superior Contact Plating:** Precision-engineered with 50u" gold-plated phosphor bronze contacts to deliver long-term corrosion resistance and minimal signal loss.
- **Industrial-Grade Housing:** Built using high-impact, flame-retardant polycarbonate (PC) resin capable of withstanding extreme working temperatures and heavy vibration.
- **Versatile OEM & Custom Packaging:** Factory-direct supply supporting custom bag printing, custom pinout setups, and scalable bulk wholesale options for global equipment manufacturers.

Product page:
<https://www.cnplugs.com/product/10p10c-rj50-industrial-modular-connector-plug/>
Category: Industrial & Inverter RJ45 Plugs

Contact & technical support

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Product details

Precision 10-Pin Industrial Connectivity for Modern Automation

In advanced industrial automation, medical equipment, and specialized data systems, standard 8-position (RJ45) modular connectors often lack the required pin density. The **10P10C RJ50 Industrial Modular Connector Plug** provides ten full signal channels within a compact modular form factor. Designed for high-reliability signal transmission, this RJ50 connector is trusted by global OEMs, system integrators, and electrical contractors for critical communications control.

Engineered for Specialized Multi-Wire Applications

Unlike standard Ethernet connectors used strictly for network data, 10P10C (RJ50) plugs handle specialized multi-conductor cable assemblies. These plugs are widely utilized in Point-of-Sale (POS) scanner interfaces, uninterruptible power supply (UPS) telemetry, solar inverters, and programmable logic controller (PLC) links. By housing ten dedicated copper conductors in a single compact plug, engineers can integrate power, ground, and multiple serial data channels seamlessly without relying on bulky D-sub harnesses.

Durable Construction and High-Fidelity Signal Integrity

Industrial environments present harsh operational conditions, including severe vibration, electromagnetic noise, and temperature fluctuations. Our RJ50 plugs are molded from high-purity Japanese polycarbonate, delivering outstanding dielectric strength and physical toughness. The internal 3-prong contact blades pierce both solid and stranded wire conductors securely, preventing micro-disconnections in high-vibration applications.

To ensure low electrical resistance and protect against ambient humidity and oxidation, each contact pin is plated with heavy 50 micro-inches of hard gold. For a deeper understanding of modular interface standards and pin assignment structures, you can learn more about [Modular connector](#) specifications on Wikipedia.

Additionally, when designing intricate control panels and long-distance serial links, maintaining signal fidelity against noise is paramount. Explore the principles of differential signaling and industrial standards via Wikipedia's overview on [RS-422](#) communication protocols.

Review the comprehensive technical details below to confirm compatibility with your multi-conductor wiring harness:

Expanding Your Enterprise Infrastructure

Selecting the correct modular plug for your specific cabling environment is vital to maintaining zero-downtime operations. For standard high-speed gigabit LAN cabling, explore our high-performance [EZ Pass-Through Cat6 RJ45 Unshielded Modular Plug](#). If your deployment requires heavy-duty electromagnetic shielding and tool-free field termination, review our enterprise-grade [Field Termination Toolless Zinc Alloy Shielded Plug](#).

Q: What is the difference between an RJ45 plug and an RJ50 plug?

A: While both plugs share a similar outer form factor width, an RJ45 connector features 8 positions and 8 contacts (8P8C), whereas an RJ50 plug features 10 positions and 10 contacts (10P10C). RJ50 is designed for specialized 10-wire serial and control equipment, not standard 4-pair Ethernet networking.

Q: Can I crimp 10P10C RJ50 plugs using a standard RJ45 crimp tool?

A: No. Because the RJ50 plug contains ten contact slots across the same housing width, the pitch between contacts is smaller. You must use a dedicated 10-pin (10P10C) modular crimping tool to ensure proper pin alignment and avoid damaging the plug.

Q: Are these 10-pin plugs suitable for solid or stranded copper conductors?

A: Yes, our versatile 3-prong contact blade design is engineered to pierce through both solid and stranded copper wires, guaranteeing a solid mechanical crimp and high electrical conductivity.

Q: Can you customize cable assemblies or supply pre-crimped RJ50 jumpers for B2B clients?

A: Absolutely. As a direct manufacturer, we offer comprehensive OEM/ODM solutions, including specialized pinout wiring, custom cable lengths, molded strain relief boots, and branded packaging for bulk orders.

Request Your B2B Wholesale Quote

Technical specifications

Specification	Published value
Connector Interface	RJ50 (10 Positions / 10 Contacts - 10P10C)
Housing Material	Transparent polycarbonate (PC)
Contact Material	Phosphor Bronze with 50u" Gold Plating over Nickel
Compatible Cable Types	10-Conductor Round or Flat Cables (Solid & Stranded)
Wire Gauge Range	26 AWG to 28 AWG
Dielectric Withstanding Voltage	1000V AC (RMS) at 60Hz for 1 Minute
Contact Resistance	≤ 20 mΩ
Mating Durability	Minimum 750 Mating Cycles
Operating Temperature	-40°C to +85°C
Standard Packaging	100 pcs/bag (Bulk Carton / Custom OEM Packaging Available)