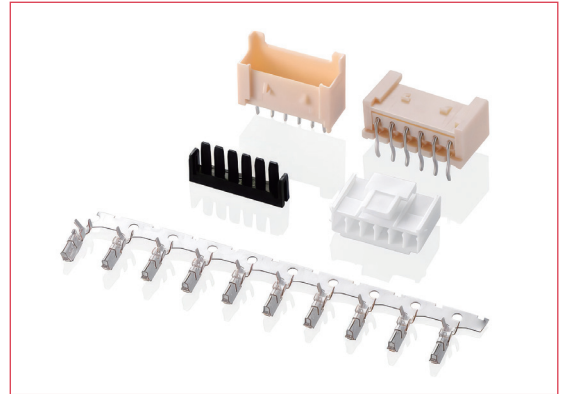


CIEP

2.50mm pitch secondary locking wire-to-board connector

"Automotive secondary locking connectors" (which typically have a TPA / Terminal Position Assurance mechanism to prevent the terminals from coming off or partially dislodging) are crucial in automotive and high-vibration industrial control applications.



CIEP Series SPEC

- Current Rating: 3.5A AC / DC (High Crimp type), 2.5A AC/DC (Low Crimp type)
- Voltage Rating: 250V AC / DC
- Contact Resistance: $\leq 20\text{m}\Omega$
- Insulation Resistance: $\geq 1000\text{M}\Omega$
- Withstanding Voltage: 1000V AC/Minute
- Wire Range: High Crimp type (AWG# 20~22) / Low Crimp type (AWG# 24~26)
- Temperature Range:
 - 40°C to +125°C (High Conductivity Copper)
 - 40°C to +105°C (Phosphor Bronze)

Core technology features

Dual-Locking Architecture

- Primary Lock: Initially secured by springs or latches when the terminal is inserted into the housing.
- Secondary Lock: A second physical restraint or compression is applied to the inserted terminal via an additional independent push plate, latch, or plug, creating a double safety feature.

Excellent Terminal Anti-Backout & High Retention Force

- Significantly enhances terminal axial retention force through mechanical forced limiting.
- Effectively resists pulling of the wiring harness, continuous severe vibration during vehicle operation, and terminal loosening or "terminal push-out" caused by thermal expansion and contraction.

Incomplete Insertion Detection and Poka-Yoke Mechanism

- Assembly Foolproofing: If the terminal is not pushed to the positioning position (partially inserted), the secondary locking structure will not be able to be smoothly pressed in or closed (it will be stuck).
- This feature can directly filter defective products during the production line assembly stage, avoiding electrical faults or overheating and fires caused by poor contact.

High Vibration and Shock Resistance

- Designed for harsh environments such as automotive, industrial, and rail transportation, meeting stringent vibration testing standards (such as USCAR-2 or LV216 automotive-grade requirements).
- Ensures stable contact resistance under frequent vibration, preventing signal interruption due to fretting corrosion.

High-Voltage Interlock Integration (HVIL)

- In new energy vehicles (EVs) or high-voltage, high-current applications, secondary interlocks are often combined with high-voltage interlock mechanisms.
- This ensures that the system cannot be energized until the connector is fully locked and safety protection is in place, thus protecting the personal safety of maintenance and operation personnel.



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Basic Specifications

Item	spec
Pitch	2.00 mm (.079")
Rated current	2.0A(AWG#26) , 2.5A(AWG#24) 3.0A (AWG#22) , 3.5A(AWG#20) 250V AC/DC (r.m.s.)
Rated voltage	250V AC/DC
Operating temperature	-40°C to +105°C
Plating	Tin or Gold

- Safety certification: UL/CUL
- Number of PINs available: 10-34 PINs (currently 10-18 PINs available)

Product Application Summary

Automotive and New Energy Industry (Primary Application Scenarios)

- Body and Interior Electronics: In-vehicle entertainment systems, instrument panels, body control modules (BCM), air conditioning control panels, etc.
- Powertrain and Chassis Systems: Engine compartment wiring harnesses, transmission control units (such as ECUs), braking systems, and steering systems—high-vibration areas.
- Advanced Driver Assistance Systems (ADAS) and Smart Cockpits: Head-up displays (HUDs), in-vehicle smart screens, surround-view reversing camera modules, and various sensor connections.
- High-Voltage Systems for New Energy Vehicles: Battery Management System (BMS), motor controllers, on-board chargers (OBCs), and high-voltage, high-current wiring harnesses for electric vehicles. The secondary locks here often integrate a "High-Voltage Interlock (HVIL)" function to ensure that power cannot be supplied if not fully locked, guaranteeing safety.



Industrial Control and Automation Equipment

- Heavy Industrial Machinery and Machine Tools: PLC control cabinets, servo motor drives, and industrial wiring harnesses that are frequently exposed to continuous vibration and shock environments.
- Robotics and Smart Manufacturing: Control signal transmission and power connections for robotic arms on automated production lines.



Rail Transit and Commercial Heavy Vehicles

- Internal control circuits and external lighting systems of vehicles such as trains, subways, trucks, and construction machinery. These scenarios face more severe driving vibrations than ordinary passenger cars and rely heavily on secondary locks to ensure stable electrical connections.



Consumer electronics and other

- Also used in some large portable devices, medical electronic devices, or outdoor handheld instruments that require high structural strength, drop resistance, or interface stability.

