

CoolPower® HD Vertical Cable-to-Board Connector

HIGH-DENSITY PIN & SOCKET CABLE-TO-BOARD CONNECTOR SYSTEM FOR COMPACT, POWER-DENSE APPLICATIONS

Amphenol's CoolPower® HD Vertical Connector Series is a versatile pin-and-socket solution that delivers high-density power output in a compact, low-profile housing. This makes it an ideal solution for addressing the increasing demands of modern power consumption. The CoolPower® HD series supports a wide range of pin diameters, including 5.7mm, 6.0mm, 8.0mm, and 9.1mm, and offers exceptional current-carrying capabilities ranging from 100A to 250A per pin. Its flexible, low-profile housing minimizes board space usage while optimizing airflow, making it well-suited for space-constrained applications. Additionally, the pull-to-release latching mechanism ensures reliable installation and secure connections. With a configurable design, the CoolPower® HD series adapts to various high-power applications, including rack and power distribution, AI/GPU servers, energy storage systems, networking switches, and more. This versatility and robust performance make it a key solution for power-dense systems.

- Wide range of pin diameters from 5.7mm to 9.1mm
- Current carrying capability of 100A to 250A, based on pin diameter size
- Flexible housing form factor designed to accommodate space-constrained applications
- Pull to release latching with automatic snap-fit for a secure connection
- Low end-of-life contact resistance of 0.25mΩ

FEATURES

- High-density pin and socket contact design
- Highly configurable tooling design
- Pull to release latching with automatic snap-fit
- Low end-of-life contact resistance of 0.25mΩ
- Multiple wire termination options including 6AWG and 8AWG
- Optimized low profile housing design

BENEFITS

- 100A to 250A per contact based on pin diameter
- Flexible form-factor housing integrates power and signal contacts into a single connector system
- Robust solution with ease of use for installation and mating of connectors
- Reliability after environmental exposure
- Flexible cable termination options to optimize cable routing in space constrained applications
- Utilizes minimal board space, enabling maximum airflow



TARGET MARKETS



TECHNICAL INFORMATION

MATERIAL

- Power Pin: High Conductivity Copper Alloy
- Crown Contact & Holder: High conductivity Copper Alloy with AGT® plating
- Housing & Cover: Glass-filled, halogen-free polyamide or other high-performance resin-rated flame retardant 94V-0 in accordance with UL94
- Ring: Stainless Steel

MECHANICAL PERFORMANCE

- Durability: 250 mating cycles
- Mating / Unmating Force: CoolPower® HD 5.7 / 6.0mm
 - Mating: 65N
 - Unmating: 10N
- Mating / Unmating Force: CoolPower® HD 8.0 / 9.1mm
 - Mating: 75N
 - Unmating: 15N
- Mating force shall not exceed 6N and unmating force shall not be less than 1.1N
- Minimum wipe length of power contact interface: 3.70mm

ELECTRICAL PERFORMANCE

- Power Contacts: *Ambient Conditions – Still air at 25°C*
 - CoolPower® HD 5.7mm: 100A – 8AWG (2x)
 - CoolPower® HD 6.0mm: 150A – 8AWG (4x)
 - CoolPower® HD 8.0mm: 200A – 8AWG (5x)
 - CoolPower® HD 9.1mm: 250A – 6AWG (4x)
- Insulation Resistance:
 - Power Contact: > 500MΩ max. at end of life
- Contact Resistance:
 - Power Contact: End-of-life resistance of 0.25mΩ max.
- Dielectric Withstanding Voltage: 2500VDC

PART NUMBERS

Description	Part Numbers
CoolPower® HD 5.7 and 6.0MM Vertical board connector	10175075-*
CoolPower® HD 5.7 and 6.0MM Vertical Receptacle	10174790-*
CoolPower® HD 8.0MM and 9.1MM Vertical board connector	10175071-*
CoolPower® HD 8.0 and 9.1MM Vertical Receptacle	10174707-*

Find part number details using the search box on www.amphenol-cs.com

PACKAGING

- Trays for board-side connectors
- Pick-up cap / reflow cap options

ENVIRONMENTAL

- Operating Temperature Range: Between -40°C and +125°C

APPROVALS AND CERTIFICATIONS

- UL Approved File # E66906

SPECIFICATION

- Amphenol Product Specification: GS-12-1941
- Amphenol Application Specification: GS-20-0908

TARGET MARKETS/APPLICATIONS



Power Supply Units & Battery Backup Units
Telecom



Artificial Intelligence / Machine Learning
Server / Storage
Rack & Power (High Voltage)
Data Center