

Minitek® 12VHPWR Connector System

Amphenol introduces the Gen 5, Minitek® 12VHPWR connector system. This new introduction CEM 5.0 PCI Express® 12V-2x6 auxiliary power connector and cable assembly support the 600W GPU cards. The 12V-2x6 auxiliary power connector is not designed to mate with legacy PCI Express® 2x3 and 2x4 12V Auxiliary Power connectors. The 12VHPWR connector power pins have a 3.00mm pitch, while the contacts in a legacy 2x3 and 2x4 connector lie on a larger 4.20mm pitch. New PCIe® Connector System (CEM5) is designed for power applications with current rating up to 9.5A/pin (12 pins energized) and the 4 signal pins supporting signal transmission.

- Rated current up to 9.5A per contact with all 12 power contacts
- Fully isolated terminals
- Positive locking on housing with low thumb latch operation
- Low level contact resistance: 5mΩ max.; Side band: 10Ωm max.



TARGET MARKETS



FEATURES

- High current alloy material used for contacts
- Fully isolated terminals
- Positive locking on housing with low thumb latch operation
- Fully polarized housings
- High retention force in housing
- UL94V-0 flammability rated Nylon material
- RoHS compliant and lead-free

BENEFITS

- Rated up to 9.5A per contact with all 12 power contacts and 4 signal contacts loaded
- Prevents terminals from potential damage during operation
- Ensures secured mating retention
- Prevents accidental mismating
- Well secured terminals in housing
- High flammability rating
- Meets environmental, health, and safety requirements

TECHNICAL INFORMATION

MATERIAL

- Header Pin: High conductivity Copper Alloy and Copper Alloy with Tin and Gold plating
- Housing: Nylon 66 and LCP, Black, UL94V-0
- Crimping Terminal: High conductivity Copper Alloy and Copper Alloy with Tin and Gold plating

MECHANICAL PERFORMANCE

- Insertion Force PWR:
 - High Insertion Force Terminal: 8.0N max.
 - Low Insertion Force Terminal: 4.1N max.
- Insertion Force Side Band:
 - Insertion force: 3.0N max.
- Withdrawal Force PWR:
 - High Insertion Force Terminal: 2.4N min.
 - Low Insertion Force Terminal: 0.6N max.
- Withdrawal Force Side Band:
 - Withdrawal Force: 3.0N max.
- Durability: 50 mating cycles
- Wire Pullout Force: Refer to product specifications

ELECTRICAL PERFORMANCE

- Low Level Contact Resistance:
 - PWR: 5mΩ max.
 - Side Band: 10mΩ max.
- Insulation Resistance: 1000MΩ min.
- Voltage Rating: 12V DC
- Current Rating: 9.5A (Power)/1A (Signal)
- Dielectric Withstand Voltage: 2200V AC
- Temperature Rise: 30°C max.

PACKAGING

- PCB Header: Tray, Tape & Reel
- Cable Housing: Bulk
- Terminal: Reel

APPROVALS & CERTIFICATION

- Glow Wire Ignition Temperature (GWIT) per IEC 60695-2-13
- Glow Wire Flammability Index (GWFI) per IEC 60695-2-12

SPECIFICATION

- UL File Number: E66906
- CSA File Number: E66906
- Amphenol Product Specification: GS-12-1702
- Amphenol Application Specification: GS-20-0704
- Amphenol Packaging Specification: GS-14-2802
- Product Drawing: Please refer the below table

ENVIRONMENTAL

- Operating Temperature Range: -40°C to +105°C
- *Includes 30°C terminal temperature rise at rated current

TARGET MARKETS/APPLICATIONS



AI and Cloud
Gaming Consoles
Graphic Interface
Networking



Computing System
Server and storage

PART NUMBERS

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

Type	Description	Product Series	Drawing Number
Dual Row Headers	PCIe® CEM-5 Right Angle through hole hybrid header with Snap-fit peg	10160920	10160920
	PCIe® CEM-5 Vertical through hole hybrid SMT header	10176941	10176941
	PCIe® CEM-5 Right Angle through hole hybrid header with Round peg	10163894	10163894
	PCIe® CEM-5 Right Angle through hole hybrid header with Metal board lock	10164279	10164279
	PCIe® CEM-5 Right Angle through hole hybrid header with Snap-fit peg	10174235	10174235
	PCIe® CEM-5 Vertical through hole hybrid header with locating peg	10161122	10161122
	PCIe® CEM-5 Vertical through hole hybrid header with locating peg, dark black	10166200	10166200
	PCIe® CEM-5 Vertical through hole hybrid header without locating peg	10171623*	10171623*
Dual Row cable housings	PCIe® CEM5 STD Receptacle Housing	10161719	10161719
	PCIe® CEM5 Receptacle Housing without bottom Rib	10168565	10168565
	PCIe® CEM5 Receptacle Housing without side Rib	10171526*	10171526*
Terminals	Receptacle PWR terminal, High Insertion force	10132447	10132447
	Receptacle PWR terminal, Low Insertion force	10166702	10166702
	Receptacle Signal terminal	10161952	10161952

*Not yet tooled up

*Amphenol supports PCIe® CEM-5 Pigtails and Cable assemblies on request



TOOLING INFORMATION

APPLICATORS

Terminal Part Number	AWG Range	Semi-Auto Crimping Machine	Fully-Auto Pneumatic Crimping Applicator	Fully-Auto Mechanical Crimping Applicator
10132447-111PLF 10132447-121PLF 10132447-131PLF 10132447-141PLF	16AWG – 20AWG	10159974-002	10159975-002	10159976-002
10166702-111PLF 10166702-121PLF 10166702-131PLF 10166702-141PLF	16AWG – 20AWG			
10161952-1210LF 10161952-2210LF 10161952-3210LF 10161952-4210LF 10161952-5210LF	28AWG	10164100-001	10164101-001	10164102-001

HAND CRIMP TOOL

Terminal Part Number	AWG Range	Hand Crimp Tool Part Number
10132447-111PLF 10132447-121PLF 10132447-131PLF 10132447-141PLF	16AWG – 20AWG	10159387-002
10166702-111PLF 10166702-121PLF 10166702-131PLF 10166702-141PLF	16AWG – 20AWG	
10161952-1210LF 10161952-2210LF 10161952-3210LF 10161952-4210LF 10161952-5210LF	28AWG	10163639-001