PWRBLADE® CONNECTOR SYSTEM

OVERVIEW

The PwrBlade® power distribution connector system from FCI includes power and signal contacts to provide power distribution and power control in a single connector. Options for either vertical or right-angle versions of PCB-mount headers and receptacles deliver support for coplanar, backplane or mezzanine connections. The connectors are ideal for robust power connections to embedded AC/DC power supplies or for board-to-board connections in servers, storage enclosures and communications equipment.

Initially developed to enable the implementation of Server System Infrastructure (SSI), Standards for Distributed Power Supplies (DPS), Mid-range Power Supplies (MPS), Highend Power Supplies (HPS) and PwrBlade® connectors are also available in wide variety of other configurations with either solder or press-fit board termination. The connectors can also be customized to address unique application requirements.

PwrBlade® connectors can be provided with one to 20 power contacts and zero to 148 signal contacts. Individual power contacts are rated at 48A current-carrying capacity; connector configurations with multiple power contacts are rated at 30A per power contact as tested for 30°C temperature rise in still air. An available cable port option provides segregated AC contacts for cable pass-through applications.

Capability for two levels of sequential mating for power contacts and two levels for signal contacts can support up to three levels of sequencing of power and signals. Sequential mating of ground, followed by power and signals can be used to provide “hot swap” capability. Molded guide posts on the header engage with the corresponding receptacle connector to assure alignment during blind-mating.

FEATURES & BENEFITS

- 48A/individual power contact; 30A/contact for 10 adjacent contacts at 30°C temperature rise in still air
- 60A/contact using UL test guidelines
- SSI-compliant connector interface for pluggable power supplies & power distribution applications
- Provides power contacts for power distribution and signal contacts for power control
- Number and placement of power and signal contacts are highly configurable for custom power needs
- Power contact spacing options exist for AC (300V max), DC (200V max) or high-density power (at same voltage)
- Meets applicable UL current interruption criteria for hot plug applications
- Rugged, molded-in guides enable blind mating

TARGET MARKETS/APPLICATIONS

- AC/DC pluggable power supplies in data, telecom & datacom/networking
- Server System Infrastructure (SSI)-compliant server systems
- Industrial PCs
- Industrial controls & instrumentation

TECHNICAL INFORMATION

MATERIALS

- Housings: high-temperature thermoplastic (UL94V-0), black
- Contact base material:
  - Power – high-conductivity copper alloy
  - Signal – copper alloy
- Contact finish:
  - Separable interface: 30µin. (0.76µm) performance-based plating over nickel
  - Board termination area: Matte tin over nickel

ELECTRICAL PERFORMANCE

- Insulation resistance
  - Power contact: 10,000MΩ
  - Signal contact: 500MΩ
- Withstanding voltage
  - Power contact: 2,500V DC
  - Signal contact: 1,000V DC
- Current rating: 48 Amps for single powered contact; de-rated to 30 Amps for 10 powered contacts at 30°C temperature rise with zero airflow
- Current rating: 60 Amps per contact per UL test guidelines when 10 contacts are fully energized
- Power contact resistance: 0.7 mΩ after environmental exposure

MECHANICAL PERFORMANCE

- Mating force:
  - 25 ounces per power contact
  - 3.5 ounces per signal contact

SPECIFICATIONS

- Product Specification: GS-12-149
- Application Specification: BUS-20-067
- PwrBlade® Worksheets for custom design or layout
- 51696 – Vertical header
- 51697 – R/A header
- 51698 – Vertical receptacle
- 51699 – R/A receptacle

Contact your local FCI representative to obtain these worksheets.

TOOLING

- For press fit tooling contact your local FCI sales representative

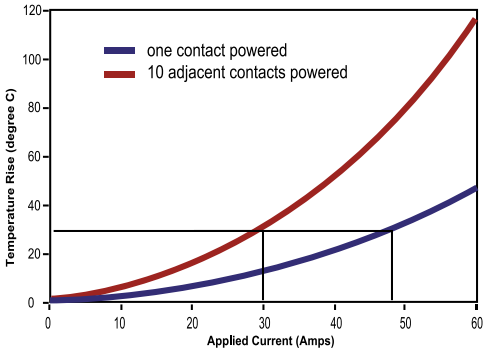
APPROVALS AND CERTIFICATIONS

- UL, CSA and TUV approved

PACKAGING

- Trays

TEMPERATURE RISE CURVE



PART NUMBERS

Description	Part Numbers
Power+Signal+Power	51720-1XXXXXXXXXLF
Power+Signal+Power Vertical Header	51700-1XXXXXXXXXLF
Power+Signal+Power Right Angle Receptacle	51760-1XXXXXXXXXLF
Power+Signal+Power Vertical Receptacle	51740-1XXXXXXXXXLF

For more information,
please contact: Communications@fci.com
or visit us at www.fci.com

PART NUMBERS

SERVER SYSTEM INFRASTRUCTURE (SSI STANDARD)

High-End Power Supply (1 Power + 24 Signal + 12 Power Configuration)	Part Numbers
Server	
Right Angle Receptacle	51416-001
Vertical Press-Fit Receptacle	51666-001
Power Supply	
Right Angle Header	51415-001LF
Vertical Header	51952-001LF
Vertical Press-Fit Header	51952-002LF
High-End Power Supply (24 Signal + 12 Power Configuration)	
Server	
Right Angle Receptacle	51261-XX001LF
Vertical Press-Fit Receptacle	51617-XX002LF
Power Supply	
Right Angle Header	51219-XX002LF
Mid-Range Power Supply (5 Power + 24 Signal + 6 Power Configuration)	
Server	
Right Angle Receptacle	51625-XX001LF
Vertical Press-Fit Receptacle	51667-XX001LF
Power Supply	
Right Angle Header	51624-XX001LF
Vertical Header	51860-001LF
Vertical Press-Fit Header	51860-002LF

AC Cable Port Right Angle Receptacle	
Cable+Power+Signal+Power	51894-YYYLF
Cable+Signal+Power	51921-YYYLF
Cable+Power+Signal	51923-YYYLF
AC Cable Port Vertical Receptacle	
Cable+Power+Signal+Power	51897-YYYLF
Cable	51897-YYYLF
Power+Signal+Cable	51897-YYYLF/ 51927-YYYLF
Cable+Power+Signal	51929-YYYLF

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For more information,
please contact: Communications@fci.com
or visit us at www.fci.com