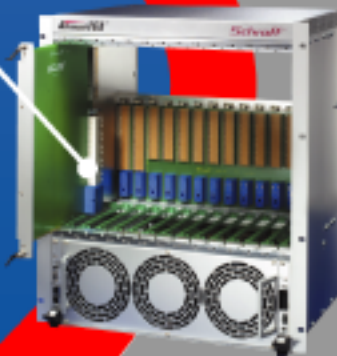
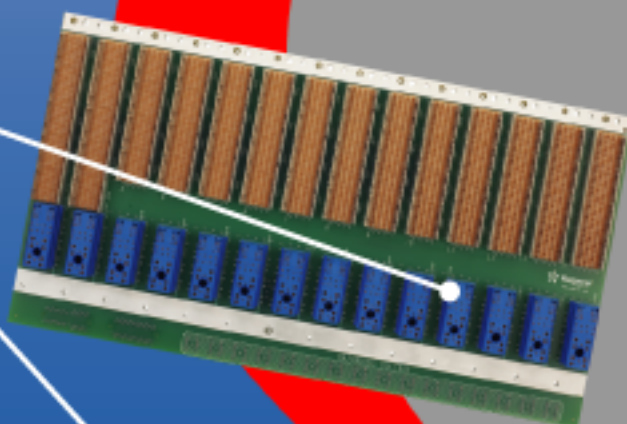
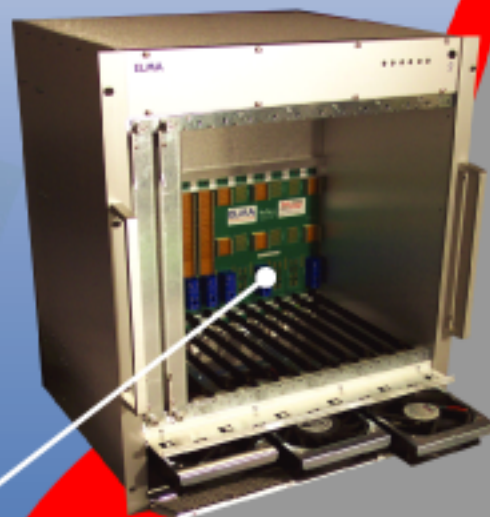




VP Series

The dedicated power interface between plug-in boards and backplanes



VPB Series Features

- Contacts for dual redundant power input
- Four levels of sequential mating, including precharge and last to mate enable, provide for controlled power ramp up
- Contacts for chassis and logic grounds
- Sixteen system management contacts
- Eight high voltage auxiliary contacts
- Outstanding blind mating capability can be used for board alignment
- Compatibility with popular high speed data connectors, no notching of the board required



Compliant to AdvancedTCA[®] Zone 1 Connector requirements

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator: Glass-filled polyester, UL 94V-0, blue color.

Contacts: Precision-machined copper alloy with gold flash over nickel available

plate. Other finishes upon request.

MECHANICAL CHARACTERISTICS:

Blind Mating System: Male and female connector bodies provide "lead-in" for 2.0 mm [0.078 inch] diametral misalignment.

Polarization: Provided by connector body design.

ELECTRICAL CHARACTERISTICS:

Contact Current Ratings, per UL 1977
See temperature rise curve below for details.

Size 16 Power Contacts: 30 amperes continuous, all contacts under load.

Size 22 Signal Contacts: 2 amperes nominal rating.

Initial Contact Resistance; Termination to termination:

Size 16 Contacts: 0.0022 ohms maximum,

Size 22 Contacts: 0.0085 ohms maximum, Per IEC 512-2, Test 2b.

Insulator Resistance: 5 G ohms per IEC 512-2, Test 3a.

Voltage Proof:

Contacts 1-16: 1,000 V r.m.s.

Contacts 17-34: 2,000 V r.m.s.

Creepage and Clearance Distance; minimum:

Contact positions 1-16 to any other contact within this group: 0.7mm [0.028 inch]

Contact positions 17-24 to any other contact within this group: 2.5mm [0.098 inch]

Contact positions 25-34 to any other contact within this group: 1.4mm [0.055 inch]

Contact positions 13-16 to 17-20: 3.0mm [0.118 inch]

Contact positions 21-24 to 25, 26: 4.0mm [0.157 inch]

Contact positions 25, 26 to 27-29: 2.0mm [0.079 inch]

Fixed Contacts: Printed board terminations, both straight and right angle. Size 16 female contacts feature "Closed Entry" design. Size 22 feature rugged "Robi-D" design.

Fixed Contact Retention in Connector Body:

Size 16 Contacts: 31 N [7 lbs.]

Size 22 Contacts: 25 N [5 lbs.]

Sequential Contact Mating System: First mate contacts 25, 26, 28, 29, 30 and 31. Second mate contact 33. Third mate contact 27 and 32. Last 27 and 32.

34. Contacts 1-24 mate before mate contacts

Power to be enabled through a last mate contact within VPB Series or another connector.

Consult Technical Sales for customer specified sequential mating.

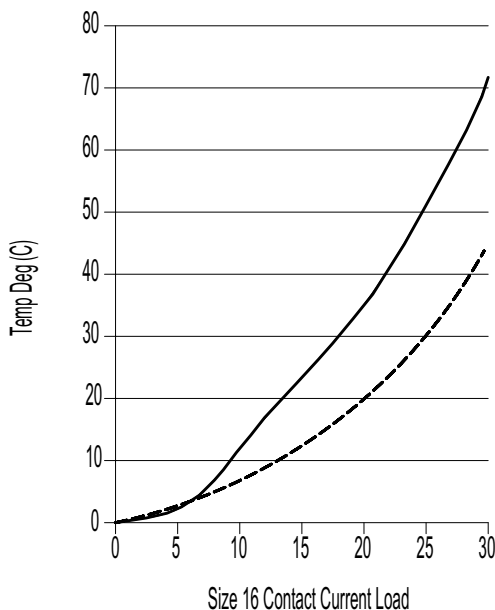
Printed Board Mounting: Mounting holes provided in connector body for printed board. Self-tapping screws are available, see ordering information page.

Mechanical Operations: 250 couplings, minimum.

CLIMATIC CHARACTERISTICS:

Working Temperature: -55°C to +125°C.

TEMPERATURE RISE CURVE



— CURVE A ALL SIZE 16 POWER CONTACT UNDER LOAD, SIGNAL CONTACTS 1-24 UNDER 1 AMP LOAD
 - - - - CURVE B SIZE 16 POWER CONTACT POSITIONS 28, 33 UNDER LOAD, SIGNAL CONTACTS 1-24 UNDER 1 AMP LOAD

Above curve developed using VPB30W8M6200A1 and VPB30W8F9300A1 connectors.

Dimensions are in millimeters [inches].
All dimensions are subject to change.

Plug-in boards used in today's computing platforms must provide higher reliability, greater functionality and require more power than ever before. Many next generation platforms deliver bulk voltage to boards. DC to DC converters are used to supply the various voltage requirements on the board. This allows systems to adapt as semiconductor voltages change.

The VPB Series was developed as a dedicated interface between backplanes and boards. The connector is capable of providing dual redundant power, system management and high voltage auxiliary circuits to each slot within the platform. The connector's outstanding blind mating capability can be used to align the board during insertion. The VPB Series is compliant to PICMG 3.0, AdvancedTCA[®], Zone 1 connector requirements. Alternate variants of the VP Series have been selected by VITA for specifications currently under development.



www.picmg.com



www.advancedtca.com



www.vita.com

For more information about the products shown on the front cover, visit the following web sites:

- ELMA chassis and backplane (top right)
<http://www.elma.com>
- Bustronic backplane (top right)
<http://www.bustronic.com>
- Rittal / Kaparel backplane (middle right)
<http://www.rittal-corp.com> and www.kaparel.com
- Schroff 14 Slot AdvancedTCA[®] System with Full Mesh Backplane (bottom right)
<http://www.schroff.us>

PICMG and the PICMG logo are registered trademarks of the PCI Industrial Computers Manufacturers Group.

AdvancedTCA, ATCA and the AdvancedTCA and ATCA logos are trademarks of the PCI Industrial Computers Manufacturers Group.

VPB FEATURES

OUTSTANDING BLIND MATING CAPABILITY

The connector is capable of mating with up to a 2 mm diametral misalignment. This blind mating feature can be used to support the plug-in board's alignment needs. This eliminates a need for separate blind mate hardware.

FOUR LEVEL SEQUENTIAL CONTACT MATING

The connector provides means for controlling power during live insertion and extraction of boards. After the blind mate feature engages during insertion, chassis and logic grounds, main input returns and precharge contacts engage. Next, main input power engages in two separate stages. Finally, last to mate enable contacts engage, which are used to signal the hot swap power manager to fully power the board.

During extraction, the first to break enable contacts signal the hot swap power manager to begin a power shut down. This serves to minimize transients, which may be caused by sudden disconnect of fully power boards.

Sequential mating contacts are separated by a minimum distance of 2.5 mm nominal which exceeds the standard practice of 1mm separation. The additional separation between contact levels ensures sequential mating even when connector component tolerance and misalignment during insertion are considered.

DUAL REDUNDANT POWER INPUT

The connector allows for the dual redundant power requirements of high availability systems. Creepage and clearance of contacts allow for voltage of 72 VDC.

If dual redundant power is not required, contacts can be depopulated for cost savings. Or, contacts can be paralleled together for higher current carrying capacity.

LOW SPEED SYSTEM MANAGEMENT CONTACTS

The connector offers up to 16 contacts which can be used to support system management circuits. This eliminates the need to use valuable high speed connectors for low speed functions.

HIGH VOLTAGE AUXILIARY CONTACTS

The connector offers up to eight (8) contacts which provide 2.5 mm creepage and clearance. These contacts can be used for any high voltage, low current circuits such as ring voltages or metallic test voltages which are common in telecom applications.

COMPATIBLE WITH HIGH SPEED DATA CONNECTORS

High speed data connectors normally hang over the front edge of the plug-in board. Because of this, the distance from the backplane to the board is fixed by the connector. This fixed distance varies between high speed connector manufacturers.

When a manufacturer offers a power connector solution along with a specified high speed connector, the power connector placement may be fixed. If a designer wishes to use one manufacturer's power solution with another manufacturer's high speed connector, the board may need to be notched so that both connectors will mate fully.

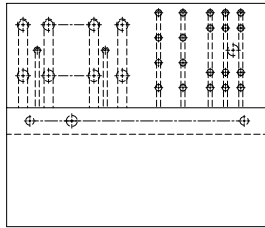
The VPB series power connector does not hang over the front edge of the board. The connector can be positioned per the requirements of the high speed connector. This eliminates the need for inconvenient and costly board notching.

CONCLUSION

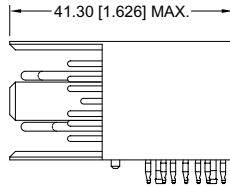
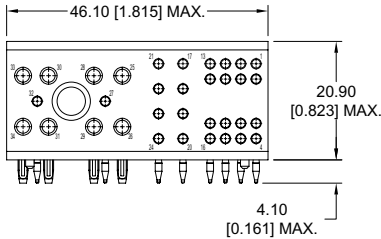
VPB series connectors offer a wide variety of capabilities in a single package. This helps to reduce overall costs and minimizes the problems associated with having to use several separate components. Also, the connector provides the reliability required for high availability systems.

MALE CONTACT CONNECTOR WITH RIGHT ANGLE PRESS-FIT TERMINATIONS

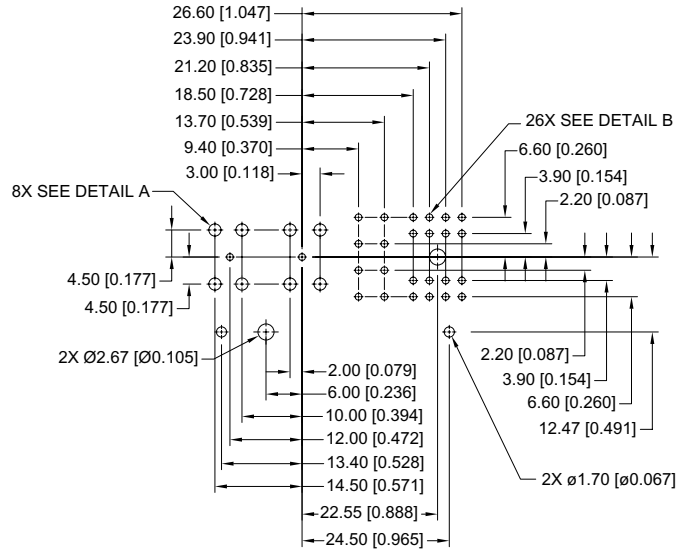
Typical Part Numbers
 VPB34W8M6200A1
 VPB34W8M6200C1



NOTE:
 Contact Plating for Connectors:
 A1 - Gold flash over nickel.
 C1 - 0.80 microns [0.000030 inches] gold over nickel.



VPB34W8M6200A1 shown for reference

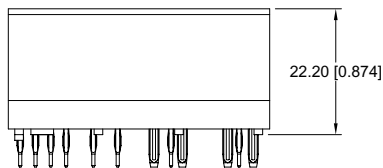
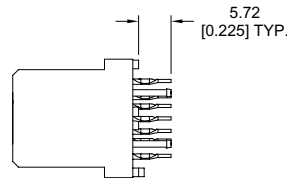
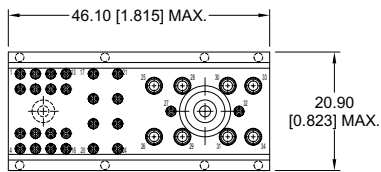


CONTACT HOLE PATTERN

NOTE: See below for suggested printed board hole sizes.

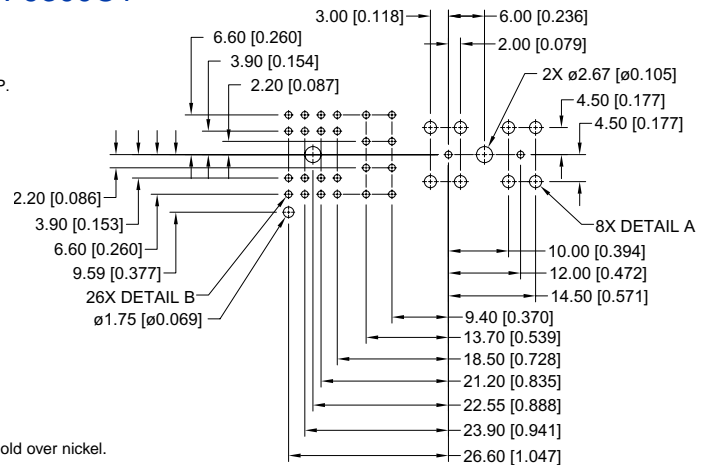
FEMALE CONTACT CONNECTOR WITH STRAIGHT PRESS-FIT TERMINATIONS

Typical Part Numbers
 VPB34W8F9300A1
 VPB34W8F9300C1



NOTE:
 Contact Plating for Connectors:
 A1 - Gold flash over nickel.
 C1 - 0.80 microns [0.000030 inches] gold over nickel.

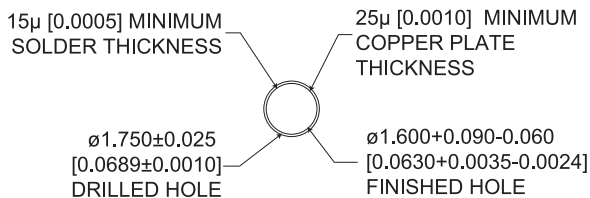
VPB34W8F9300A1 shown for reference



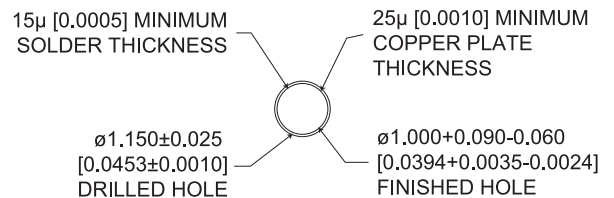
CONTACT HOLE PATTERN

NOTE: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES



DETAIL A
 SIZE 16



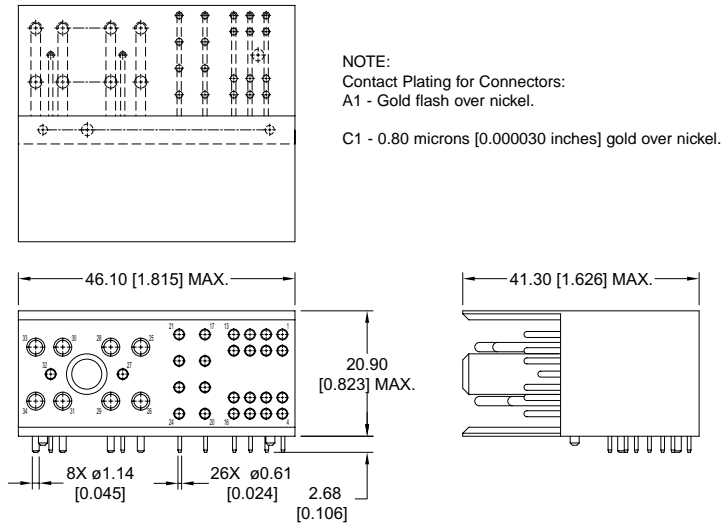
DETAIL B
 SIZE 22

Note: For other PCB plating compositions, i.e. ENIG, (Electroless Nickel, Immersion Gold), consult Technical Sales.

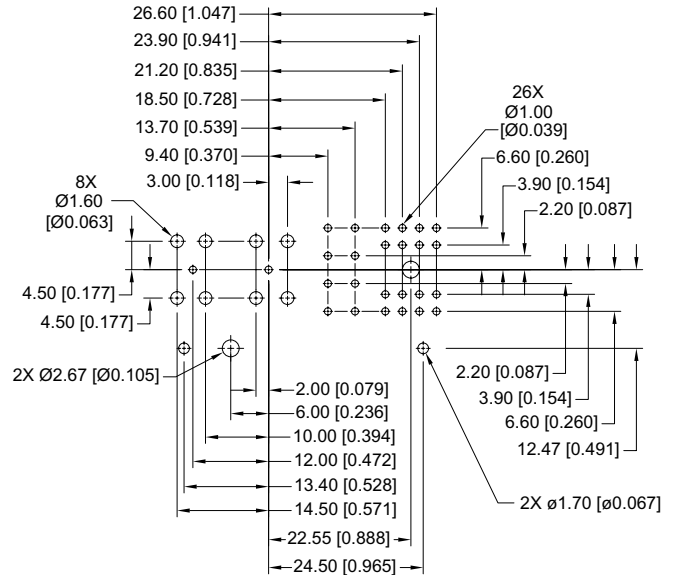
Dimensions are in millimeters [inches].
 All dimensions are subject to change.

MALE CONTACT CONNECTOR WITH RIGHT ANGLE SOLDER TERMINATIONS

Typical Part Numbers
 VPB34W8M400A1
 VPB34W8M400C1



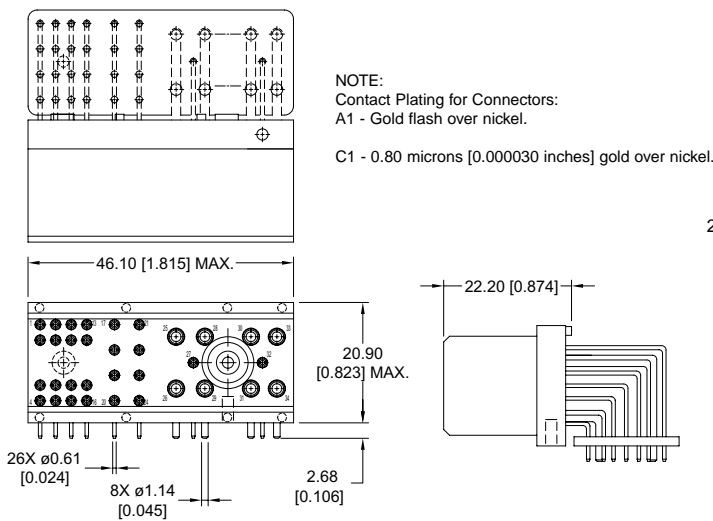
VPB30W8M400A1 shown for reference



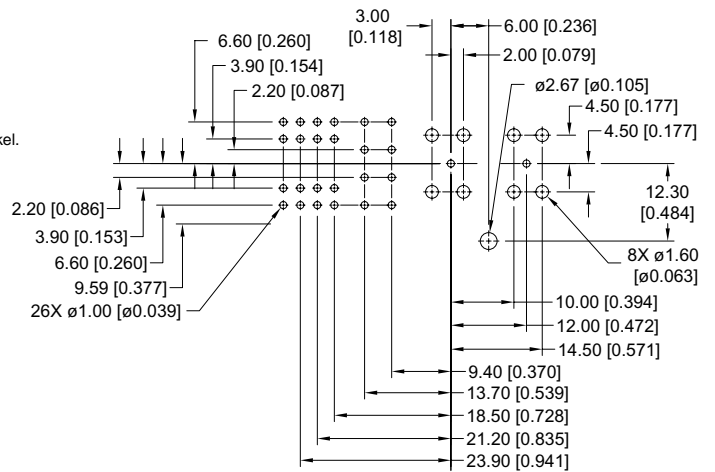
CONTACT HOLE PATTERN

FEMALE CONTACT CONNECTOR WITH RIGHT ANGLE SOLDER TERMINATIONS

Typical Part Numbers
 VPB34W8F400A1-394.0
 VPB34W8F400C1-394.0



VPB30W8F400A1-394.0 shown for reference

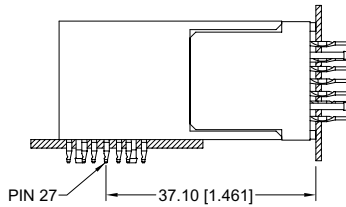


CONTACT HOLE PATTERN

This connector option is offered to support extender cards.
 Consult Technical Sales for higher volume requirements.

MATING DIMENSIONS

(FULLY MATED)



Right Angle Board Mount
Male to Straight Board
Mount Female

1 mm [0.039 inch] separation allowed

EXAMPLES OF POSSIBLE CONTACT ASSIGNMENTS

Contact Position	Function
1-16	Low Speed Hardware Management
17-24	High Voltage Metallic Test and Ringing Generator Signals
25	Shelf Ground
26	Logic Ground
27/32	Enables for A and B power
28	A Return
29	B Return
30	A Early
31	B Early
33	A Voltage
34	B Voltage



VPB30W8M6200A1



VPB30W8F9300A1

Dimensions are in millimeters [inches].
All dimensions are subject to change.

ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Following Steps 1 Through 7

STEP	1	2	3	4	5	6	7
	VPB	30W8	F	93	0	0	A1

STEP 1 Basic Series

VPB - VP Series

STEP 2 Connector Variants

- 34W8 - All contacts positions populated
- * 30W8 - Contact positions 1-4 are not populated
- ** 22W8 - Contact positions 1-4 and 17-24 are not populated

STEP 3 Connector Gender

M - Male
F - Female

STEP 4 Type of Contact

- 4 - Right Angle Board Mount, Solder. (Female requires MOS 394.0)
- 62 - Right Angle Board Mount, Press-fit. Male only
- 93 - Straight Board Mount, Press-fit. Female only

* Standard variant for AdvancedTCA™ backplanes.
Standard option for frontboards.

** Standard option for AdvancedTCA™ frontboards.

- VPB Series connectors are **designed to be mounted to the PCB with screws**. Please use the following type: Phillips Pan Head Self-Tapping Screw, 2-28 Triplask II Trilobular threads or equivalent. Screws are available from Positronic Industries. See chart for part number.

- Female contact press-fit connectors **require a press-fit tool**, part number 9513-308-1-41, for installation.

- The use of a support tool when installing **press-fit** connectors is recommended. For female connectors use 9513-400-6-41, for male connectors use 9513-400-8-41.

STEP 7 Contact Plating

A1 - Gold flash over nickel.

A2 - Gold Flash over nickel on mating end and 5.00 microns [0.000200 inch] solder coat on termination end. Not available with code 93 or code 62 in step 4.

C1 - 0.80 micron [0.000030 inch] gold over nickel.

C2 - 0.80 microns [0.000030 inch] gold over nickel on mating end and 5.00 micros [0.00200 inch] solder coat on termination end. Not available with code 93 or code 62 in step 4.

STEP 6

0 - None

STEP 5

0 - None

MOUNTING SCREWS

PART NUMBER	THREAD LENGTH
4546-7-1-16	6.35+0.00-0.76 [0.250+0.000-0.030]
4546-7-2-16	7.93+0.00-0.76 [0.312+0.000-0.030]
4546-7-3-16	9.53+0.00-0.76 [0.375+0.000-0.030]
4546-7-4-16	11.11+0.00-0.76 [0.438+0.000-0.030]

Install Screw to a Depth of
3.50 [0.138] Minimum
5.00 [0.197] Maximum

Let us work with you to develop variants of the VP Series to meet your specific requirements.

Dimensions are in millimeters [inches].
All dimensions are subject to change.

Unless otherwise specified, dimensional tolerances are:

- 1) ±0.13 mm [0.005 inches] for all diameters.
- 2) ±0.38 mm [0.015 inches] for all other dimensions.

Other Power Connector Products

Visit www.connectpositronic.com to view all products.

Positronic Industries has a wide variety of power connector products. Let us provide solutions for Power Entry Modules (PEM) and other power distribution needs.



Power Connection Systems

Available with 3 to 30 contacts and utilizes an integral locking system. Offers a wide variety of termination styles and accessories for board to board, cable to board, and panel to cable applications.



Infinity/Mini-Infinity

For low, medium and high power applications requiring outstanding blind mating capability. Offers mixed contact density, sequential mate contacts, and a wide variety of termination styles.



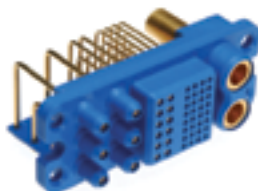
Compact Power Connector

The power interface for platforms that utilize IEEE1101.10 form factors including CompactPCI®. Offers a wide variety of sizes and contact variants. Provides for input, output, and system management in a single connector as well as three-level sequential mating.



Goldfish

For low to mid range power applications that require excellent blind mating. Additional options include float mounts, selective loading and sequential mating.



Sumo

Drop-in replacement to the popular top drawer connector

Sales Offices

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Tel (417) 866-2322 • Fax (417) 866-4115 • Toll Free (800) 641-4054
info@connectpositronic.com

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contact@connectpositronic.com

POSITRONIC ASIA PTE LTD.

3014A Ubi Road 1 #07-01 • Singapore 408703
Telephone (656) 842 1419 • Fax (656) 842 1421
singapore@connectpositronic.com



PICMG 3.0 ZONE 1 POWER CONNECTORS PART NUMBER CROSS REFERENCE

FRONT BOARD CONNECTOR

<u>PICMG 3.0 Generic P/N</u>	<u>Positronic P/N</u>
ZP-A-030M-P2-2B	VPB30W8M6200*
ZP-A-030M-S4-2B	VPB30W8M400*
ZP-B-022M-P2-2B	VPB22W8M6200*
ZP-B-022M-S4-2B	VPB22W8M400*

BACKPLANE CONNECTOR

<u>PICMG 3.0 Generic P/N</u>	<u>Positronic P/N</u>
ZP-A-030F-P1-2B	VPB30W8F9300*

* denotes type of contact finish

Replace * with A1 = Gold flash over nickel

Replace * with C1 = 0.80 micron (0.000030 inch gold over nickel)

See Positronic Product Literature for more information.



Positronic Industries, Inc.

Springfield, Missouri USA • 800.641.4054 • info@connectpositronic.com

www.connectpositronic.com

POSITRONIC PRODUCTS

Contact Sizes: 0, 8, 12, 16, 20 and 22
Current Ratings: To 150 amperes
Terminations: Crimp, wire solder, straight solder, right angle solder, straight press-fit and right angle press-fit
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41



FEATURES: Hot swap capability • AC/DC operation in a single connector • Signal contacts for hardware management • Blind mating • Sequential mating • Large Surface Area Contact Mating System • Wide variety of accessories • Customer specified contact arrangements

Contact Sizes: 8, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle solder and straight press-fit
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-24308, Goddard Space Flight 311P, MIL-C-39029, IP65, IP67



FEATURES: Three performance levels available: professional quality, military quality and space-flight quality provide multiple performance to cost choices • Options include thermocouple contacts, filtered, environmentally sealed and dual port package including mixed density • Broad selection of accessories

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-28748, MIL-C-39029, CCITT V.35



FEATURES: Two performance levels available: industrial quality and military quality provide two performance to cost choices • Large Surface Area Contact Mating System • A wide variety of accessories • Broad selection of contact variants and package sizes

Contact Sizes: 12, 16, 20 and 22
Current Ratings: To 25 amperes nominal
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in two package sizes
Qualifications: Environmental protection to IP67



FEATURES: Non-corrodible / lightweight composite construction • EMI/RFI shielded versions • Thermocouple contacts • Environmentally sealed versions • Rear insertion/ front release of removable contacts • Two level sequential mating • Overmolding available on full assemblies

All Positronic connector products can be supplied as part of cable assemblies whose technical characteristics would reflect those of the connectors being used within the assembly.



FEATURES: Shorten the supply chain and reduce additional costs and delays by "cablizing" • Overmolding available • Shielded and environmentally sealed versions available • Power cables and access boxes which meet the SAE J2496 specification

Contact Sizes: 8, 12, 16, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Feed through is standard; flying leads and board mount available upon request
Configurations: See D-Subminiature and Circular Configurations above
Qualifications: Space-D32



FEATURES: Intended for use as an electrical feedthrough in high vacuum applications • Leakage rate: 1×10^{-9} mbar.l/s • Signal, power, coax and high voltage versions available • Connectors can be mounted on flange assembly per customer specification

For more information, visit www.connectpositronic.com or call your nearest Positronic sales office as given on the back of this catalog.