

# POSITRONIC GLOBAL Commercian SOLUTIONS







命命命令

چ

# **VPX Series Features**

Six power contacts Three level of sequential mating Compatible with IEEE 1101.2 conduction cooled boards Compatible with popular high speed data connectors. no notching of the board required High reliability large surface area contact system

Compliant to VITA 41 VXS power connector requirements









The dedicated power interface between plug-in boards and backplanes

Catalog C-035 Rev. C

Today, some customer applications have requirements for high bandwidth transfer between VMEbus cards. Requirements which even the most updated VME parallel bus cannot support. To meet this need the VITA 41 specification has been developed. VITA 41 VXS (VME Switched Serial) defines a common data plane interconnect using switched serial topologies.

**Positronic's VPX** power connector was **developed** to support **VITA 41**. The **VPX series** provides a dedicated power interface between boards and backplanes eliminating the need to use valuable high speed contacts to carry power.

The VPX series has a unique package size which allows compatibility with conduction cooled boards per IEEE 1101.2.

A unique size, multiple power contacts, three levels of sequential mating and high reliability make the **VPX series** suitable for VITA 41 or any similar application.





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

### **TECHNICAL CHARACTERISTICS**

#### **MATERIALS AND FINISHES:**

**Insulator:** Glass-filled polyester, UL 94V-0,

blue color.

Contacts: Precision-machined copper

alloy with gold flash over nickel plate. Other finishes available

upon request.

#### **ELECTRICAL CHARACTERISTICS:**

Contact Current Ratings, See temperature rise curve for

per UL 1977 details.

Size 20 Power Contacts: 24 amperes continuous,

all contacts under load.

Initial Contact Resistance: 0.001 ohms maximum,

per IEC 512-2, Test 2b.

**Insulator Resistance:** 5 G ohms per IEC 512-2,

Test 3a.

Working Voltage: 200 V r.m.s

Creepage and Clearance

Distance; minimum:

2.0 mm [0.079 inch]

#### **MECHANICAL CHARACTERISTICS:**

Blind Mating System: Male and female connector bodies provide "lead-in" for

1.0 mm [0.039 inch] diametral

misalignment.

**Polarization:** Provided by contact arrangement.

Fixed Contacts: Printed board terminations.

Female contacts feature "Closed Entry" design.

**Fixed Contact Retention** 

in Connector Body: 40 N [9 lbs.]

Sequential Contact

Mating System: First mate, Second mate and

Third mate contacts available.

Power to be enabled through a last mate contact within VPX

Series or another connector.

See Sequential Mating Code Section for more Information.

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.

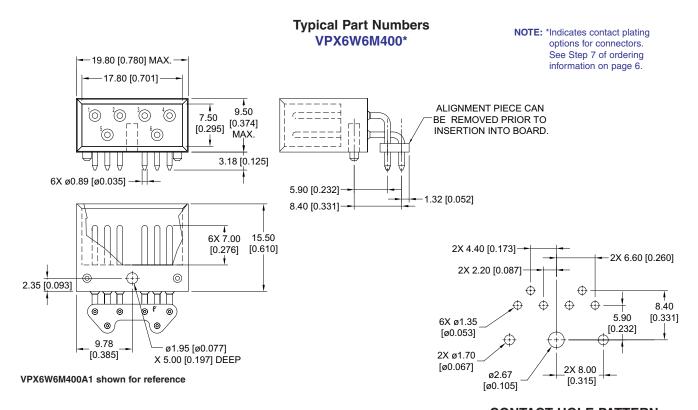


VPX6W6F9300A1 and VPX6W6M400A1



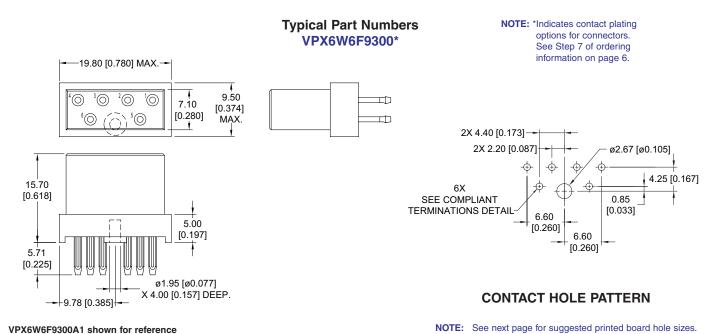


# MALE CONNECTOR WITH RIGHT ANGLE (90°) SOLDER TERMINATIONS CODE 4



### CONTACT HOLE PATTERN

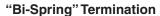
# FEMALE CONNECTOR WITH COMPLIANT PRESS-FIT TERMINIATIONS CODE 93



DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT PRESS-FIT CONNECTORS

BI-SPRING COMPLIANT PRESS-FIT CONTACT HOLE						
BOARD	CONTACT	DRILL	RECOMMENDED PLATING	FINISHED		
TYPE	SIZE / TYPE	HOLE SIZE		HOLE SIZES		
TIN-LEAD	20		3µ [0.0001] minimum solder	<u>ø1.19±0.05</u>		
SOLDER PCB	BI-SPRING		over 25µ [0.0010] min. copper	[ø0.047±0.002]		







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

## **SEQUENTIAL MATING CODE**

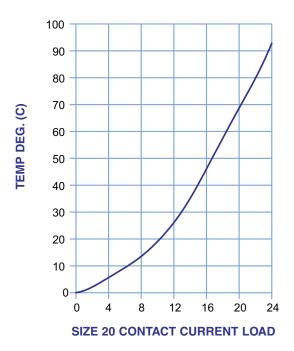
# SELECTION GUIDE FOR ORDERING DIFFERENT CONTACT LENGTHS STEP 9 OF ORDERING INFORMATION

SELECT CONNECTOR USING ORDERING INFORMATION ON PAGE 6
THEN CHOOSE STEPS BELOW FOR SEQUENTIAL MATING SYSTEM CONTACTS

STEP	1	2	3	4	5	6	7	8	9	
EXAMPLE	A	1	В	2	В	3	С	4	С	
STEP 1 Specify code for most frequently used contact mating length. This length is used for all contacts not									L	ength of contact specified in step 8 Choose from length code chart).
specified in steps 2 through 9.  STEP 2									F	Position number for fourth special ength contact.
Position number for first special length contact.							'		L	ength of contact specified in step 6
STEP 3 Length of contact specified in step 2 (Choose from length code chart)									S	Choose from length code chart).  STEP 6  Position number for third special
STEP 4				,						ength contact.
Position number for second special length contact.									L	Length of contact specified in step 4 Choose from length code chart).

CONTACT CODE	CONTACT LENGTH
А	8.50 [0.335]
В	7.00 [0.276] STANDARD
С	5.50 [0.217]

### **TEMPERATURE RISE CURVE**

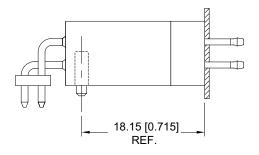


Temperature curve developed using VPX6W6F9300A1 and VPX6W6M400A1 connectors and 16 AWG wire.

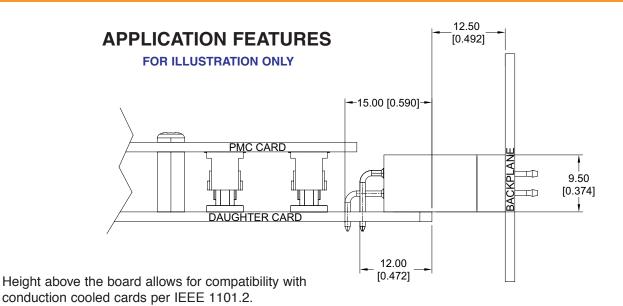
All Size 20 Contacts under load.

### MATING DIMENSIONS

Right Angle (90°) Board Mount Male to Straight Board Mount Female (FULLY MATED)



1 mm [0.039 inch] separation allowed



Limited depth into the daughtercard allows compatibility with many popular PMC card configurations. (Alignment piece may need to be removed prior to installation).

Products described within this catalog may be protected by one or more of the following US. patents:

#4,900,261 #5,255,580 #5,329,697 #6,260,268 #6,835,079 #7,115,002

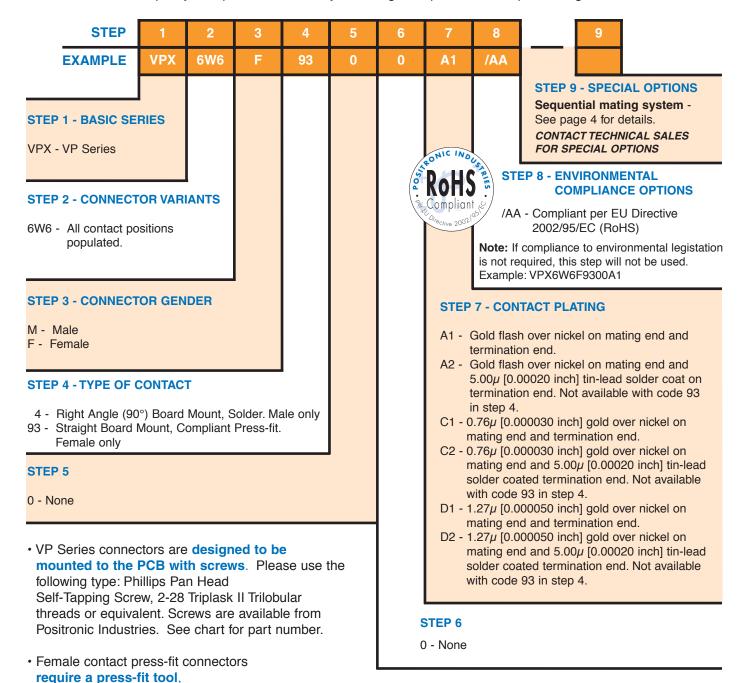
Patented in Canada, 1992 Other Patents Pending

Information in this catalog is proprietary to Positronic and its subsidiaries. Positronic believes the data contained herein to be reliable. Since the technical information is given free of charge, the user employs such information at his own discretion and risk. Positronic Industries assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

Positronic Industries' FEDERAL SUPPLY CODE (Cage Code) FOR MANUFACTURERS is 28198

### ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 7



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

part number 9513-308-4-41, for installation.

Unless otherwise specified, dimensional tolerances are:

- 1) ±0.03 mm [0.001 inches] for male contact mating diameters.
- ±0.08 mm [0.003 inches] for contact termination diameters. ±0.13 mm [0.005 inches] for all other diameters.
- ±0.38 mm [0.015 inches] for all other dimensions.

#### **MOUNTING SCREWS**

STEEL SCREW PART NUMBER	STAINLESS STEEL SCREW PART NUMBER	THREAD LENGTH
4546-7-1-16	4546-7-6-4	6.35+0.00-0.76 [0.250+0.000-0.030]
4546-7-2-16	4546-7-7-4	7.93+0.00-0.76 [0.312+0.000-0.030]
4546-7-3-16	4546-7-8-4	9.53+0.00-0.76 [0.375+0.000-0.030]
4546-7-4-16	4546-7-9-4	11.11+0.00-0.76 [0.438+0.000-0.030]

Mounting hole in connector is 4.00 [0.157] deep.

Contact Technical Sales for RoHS compliant mounting screw information.