

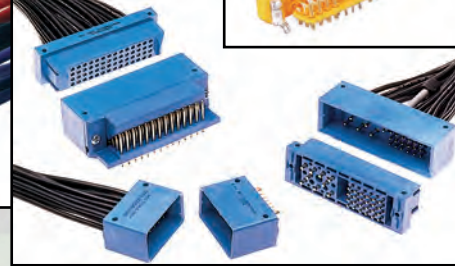
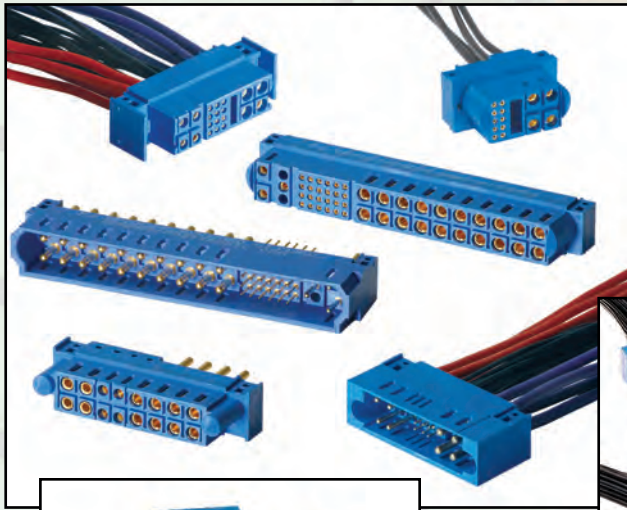


POSITRONIC®
GLOBAL *Connector* SOLUTIONS

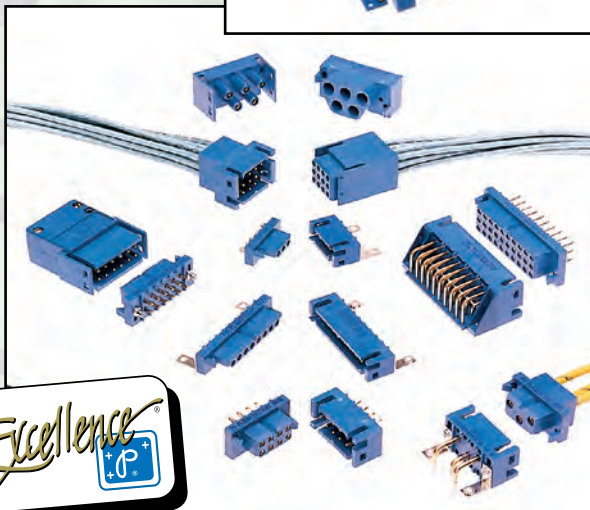


LOOK
FOR OUR
NEW PRODUCTS!

POWER
CONNECTOR
SELECTION GUIDE



WIDEST VARIETY OF
POWER CONNECTORS



Product of
Connector Excellence

Catalog C-040 Rev. **B11**
A001 Rev. C, A002 Rev. B2, A007 Rev. NC,
A010 Rev. B4, A014 Rev. NC, C004 Rev. E2,
C012 Rev. D, C014 Rev. E3, C017 Rev. G,
C030 Rev. C, C031 Rev. G, C035 Rev. C, C036 Rev. C

www.connectpositronic.com



POSITRONIC
GLOBAL *Connector* SOLUTIONS

Power Connector Selection Guide

Positronic's Blue Connectors are Green

Energy is essential to everyone. Often we do not give thought to where energy comes from or how much we consume until energy is not readily available.

Energy has become an area of focus for governments, private industry, and citizens. Enhanced methods of producing energy from traditional sources, development of new energy sources and conservation of energy from all sources have become more crucial than ever before.

Across the world, the electronic equipment that we all rely upon in our daily lives consumes a vast amount of energy. An unavoidable waste of energy occurs when power is distributed throughout electronic equipment. As electrical current flows through conductors and connectors, unwanted heat is generated in proportion to the amount of electrical resistance encountered.

Lowering resistance in connector contacts and conductors will reduce the amount of heat generated, and result in less lost or wasted energy. Additional energy will be saved, as cooling systems will have less heat to draw out of the equipment.

In the past, the primary metric for power connectors has been contact current ratings. In the future, contact resistance may become equally important. While it is true that contact resistance and contact current ratings are closely associated, contact current ratings cannot be used to quantify the energy consumed by contacts.

Current ratings are based on the temperature rise of a connector or contact at a specific current level. A connector design or test method allowing relatively rapid heat dissipation may yield a reasonable temperature rise, while a relatively high amount of energy is still being wasted.

Within the connector industry, there are a variety of test methods used to quantify a particular performance metric. Different test methods can yield different values for the same metric. This lack of uniformity can be confusing to connector users who are trying to compare connectors offered by various manufacturers. Third party assessment can give connector users a common point of reference when making connector choices.

Assessors use contact resistance as the metric to determine the relative efficiency of connector contacts. These assessments verify the claims made by manufacturers.

Once the assessment is made, the assessor issues a statement that will aid power connector users in evaluating contact efficiency as it relates to energy consumption. As an example, the Positronic VPB series size 16-power contacts recently underwent evaluation. The contact resistance was found to be less than one milliohm each. This low contact resistance is achieved by use of high conductivity contact materials. In addition, Positronic's

Large Surface Area (LSA) contact system is utilized as the interface between male and female power contacts in VPB series connectors.

The VPB series was designed for use as the Zone 1 power connector in AdvancedTCA (ATCA) telecommunication computing systems. Zone 1 connectors provide power from backplanes to front boards in ATCA chassis. The low contact resistance of Positronic's

VPB series provides energy savings opportunities in any application using this connector.

The following formula verifies the energy savings of a lower resistance contact at a given current:
Power Consumption (Watts) = Current Flow² (Amperes²) X Contact Resistance (Ohms). Contact resistance has a one-to-one effect on power consumption. If, the contact resistance is reduced by half, the power consumption is reduced by half.

Low resistance power contacts also provide benefits in systems sensitive to voltage drop. This is demonstrated in the following formula: **Voltage drop across contact pairs = Current Flow (Amperes) X Contact Resistance (Ohms).** Once again, contact resistance has a one-to-one effect. Reducing the contact resistance by half reduces voltage drop by half.

Higher energy costs and government legislation will cause energy conservation efforts to continue to intensify. If we consider the vast numbers of power contacts in electronic equipment around the world, it is clear how lower contact resistance can play a role in meeting energy conservation goals. Positronic utilizes high conductivity contact materials and unique contact interfaces to provide low contact resistance in our power connector products. To learn more about these products, visit connectpositronic.com.

FEATURES

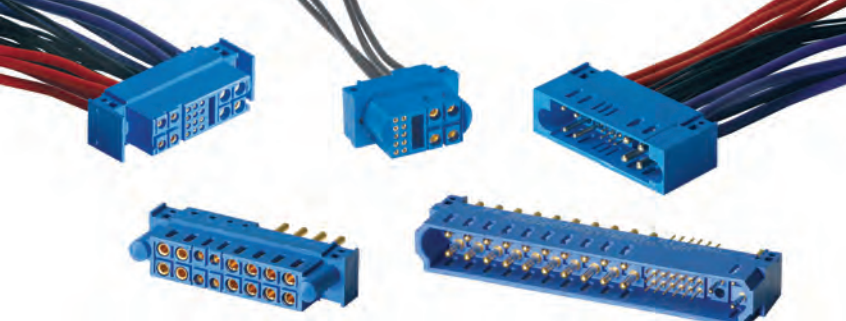
- ✓ Average power contact resistance is less than 0.001 ohms
- ✓ Average signal contact resistance is less than 0.005 ohms
- ✓ RoHS compliant

Blue colored connectors shown in this catalog are a trademark of Positronic Industries, Inc., registered in the U.S. Patent and Trademark Office. The Positronic Global Connector Solutions logo is a trademark of Positronic Industries.

CompactPCI® and the CompactPCI® logo; AdvancedTCA® and the AdvancedTCA® logo; MicroTCA® and the MicroTCA® logo; and PICMG®, are registered trademarks of the PCI Industrial Computers Manufacturers Group.

PSMA® is a registered trademarks of the Power Sources Manufacturers Association.

Visit www.connectpositronic.com for in-depth product details



POSITRONIC
GLOBAL *Connector* SOLUTIONS

Power Connector Selection Guide

SCORPION

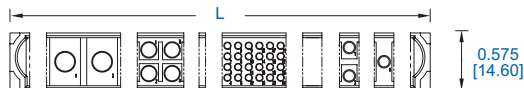
Design Your Own Connector

CONTACT VARIANT & DIMENSIONS

**MODULAR TOOLING PRODUCES A ONE-PIECE INSULATOR
FOR AN ALMOST INFINITE NUMBER OF VARIANTS**

Variants shown are not actual size.

Dimensions are for reference. Consult catalog or website for detailed connector dimensions.



L = Length varies depending on your individual connector configuration

TWENTY ONE (21) DIFFERENT MODULE TYPES

Each contact size offers multiple module types with various contact quantities.

Example: Size 16 contacts modules are available with one (1), two (2), four (4) or eight (8) contact options. Each module varies in length.

Blank modules are available to increase creepage and clearance.

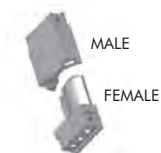
CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT MATERIAL	CONTACT CURRENT RATING	CONTACT RESISTANCE
SIZE 22	Standard	3 amps	0.005 ohms
SIZE 16	Standard	25 amps	0.0016 ohms
	HC*	30 amps	0.0007 ohms
SIZE 12	Standard	35 amps	0.001 ohms
	HC*	40 amps	0.0004 ohms
SIZE 8	Standard	50 amps	0.0006 ohms
	HC*	60 amps	0.0004 ohms

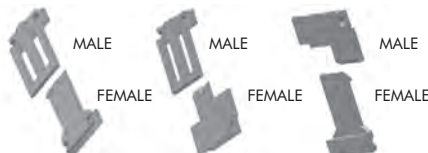
*1 HC = High Conductivity Contact Material.

GUIDE AND LOCKING OPTIONS

Blind Mate System



Locking Latch Systems



VENT OPTIONS

Connector body, shown without vents.



Connector body, shown with optional venting for air cooling.

Insulators: glass filled polyester, UL 94 V-0, blue color. (Consult Technical Sales for availability of high temperature insulator material.)

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request. Solder coated termination options available.

Electrical characteristics: contact current ratings to 60 amps per contact in accordance to UL and TÜV.

Contact resistance: as low as 0.0004 ohms per IEC 60512-2, test 2b.

Voltage proof: 2,200 V rms per IEC 60512-2, Test 4a, Method C.

Mechanical operations: 500 couplings minimum, per IEC 60512-5.

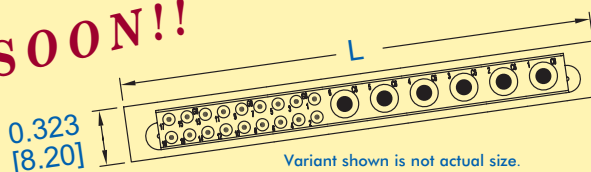
Termination types: cable and panel mount – crimp or solder; PCB mount – straight and right angle (90°), solder and press-fit.

Features: venting features, locking latch system, sequential mating contacts; blind mateable; high conductivity contacts; shielded contacts; mixed density contacts.

**LOW PROFILE
SCORPION**



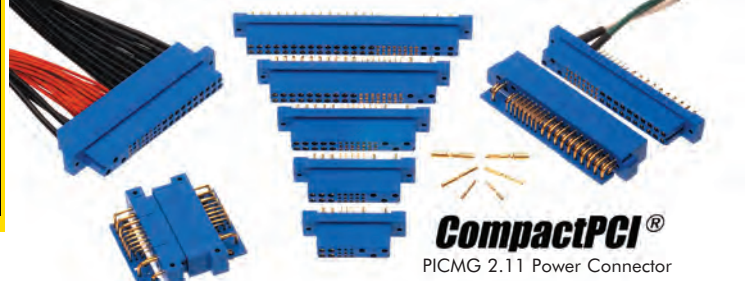
COMING SOON!!



Variant shown is not actual size.

L = Length varies depending on your individual connector configuration

**HALF
HEIGHT
Scorpion connector!**

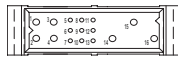


CompactPCI®
PICMG 2.11 Power Connector

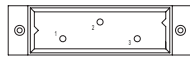
COMPACT POWER CONNECTORS

PCI SERIES

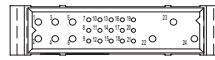
CONTACT VARIANTS



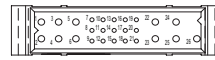
PCIC 16W7
Seven (7) Size 16 and
Nine (9) Size 22 Contacts



PCIC 3W3
Three (3) Size 16 Contacts
*CREEPAGE AND CLEARANCE FOR HIGH
VOLTAGE APPLICATIONS*

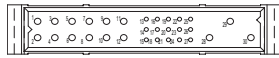


PCIB 24W9
Nine (9) Size 16 and
Fifteen (15) Size 22 Contacts

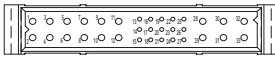


PCIB 26W11
Eleven (11) Size 16 and
Fifteen (15) Size 22 Contacts

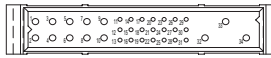
Variants shown are not actual
size, for connector dimensions
refer to dimensions section at
the top of page 3.



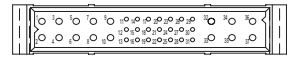
PCIM 30W15
Fifteen (15) Size 16 and
Fifteen (15) Size 22 Contacts



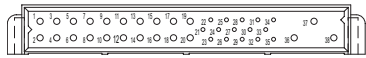
PCIM 33W18
Eighteen (18) Size 16 and
Fifteen (15) Size 22 Contacts



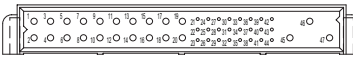
PCIM 34W13
Thirteen (13) Size 16 and
Twenty-one (21) Size 22 Contacts



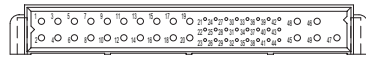
PCIM 37W16
Sixteen (16) Size 16 and
Twenty-one (21) Size 22 Contacts



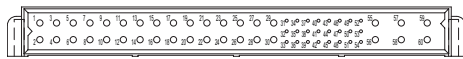
PCIH 38
Twenty-three (23) Size 16 and
Fifteen (15) Size 20 Contacts



PCIH 47*1
Twenty-three (23) Size 16 and
Twenty-four (24) Size 22 Contacts



PCIH 49W25
Twenty-five (25) Size 16 and
Twenty-four (24) Size 22 Contacts



PCIA 60W36
Thirty-six (36) Size 16 and Twenty-four (24) Size 22 Contacts

Connector variants shown are also available as an inverted option,
please consult catalog or website for detailed information.

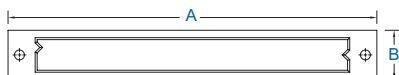
*1 PICH47 is compliant to PICMG 2.11 power connector requirements.

CONTACT CURRENT RATINGS PER UL 1977

CONNECTOR VARIANT	CONTACT SIZE/TYPE	CONTACT CURRENT RATING
PCIC16W7	16 / Power	-positions 14, 15 and 16: 40 amperes continuous. *2 -positions 1-4: 30 amperes continuous. *2
	22 / Signal / Low Power	3 amperes continuous. *2
PCIC3W3	16 / Power	32 amperes continuous. *2
PCIB24W9	16 / Power	-positions 22, 23 and 24: 45 amperes continuous. *2 -positions 1-6: 35 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIB26W11	16 / Power	34 amperes continuous. *2
	22 / Signal / Low Power	3 amperes continuous. *2
PCIM30W15	16 / Power	-positions 28, 29 and 30: 45 amperes continuous. *2 -positions 1-12: 32 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIM33W18	16 / Power	30 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIM34W13	16 / Power	-positions 32, 33 and 34: 45 amperes continuous. *2 -positions 1-10: 32 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIM37W16	16 / Power	30 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIH38	16 / Power	-positions 36, 37, and 38: 40 amperes continuous. *2 -positions 1-20: 28 amperes continuous. *2
	20 / Signal / Low Power	5 amperes nominal rating
PCIH47	16 / Power	-positions 45, 46, and 47: 40 amperes continuous. *2 -positions 1-20: 28 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating.
PCIH49W25	16 / Power	28 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating
PCIA60W36	16 / Power	-positions 55-60: 38 amperes continuous. *2 -positions 1-30: 28 amperes continuous. *2
	22 / Signal / Low Power	3 amperes nominal rating

*2 All contacts under load.

DIMENSIONS



Dimensions are for reference.
Consult catalog or website for
detailed connector dimensions.



POSITRONIC
GLOBAL *Connector* SOLUTIONS

Power Connector Selection Guide

SERIES	A	B	SERIES	A	B
PCIH	3.694 [93.82]	0.494 [12.54]	PCIC	1.840 [46.74]	0.494 [12.54]
PCIA	4.588 [116.53]	0.494 [12.54]	PCIM	2.852 [72.44]	0.494 [12.54]
PCIB	2.217 [56.32]	0.494 [12.54]			

Insulators: glass filled polyester, UL 94 V-0, blue color.

Contacts: high conductivity, precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 45 amps per contact in accordance to UL 1977.

Contact resistance: as low as 0.0007 ohms max. at rated current.

Voltage proof: up to 3,000 V rms

Mechanical operations: 250 couplings minimum (depending on connection system)

Termination types: cable and panel mount – crimp or solder, PCB mount – straight and right angle (90°), solder and press-fit.

Features: sequential mating contacts; reliable polarization; blind mateable; mixed density contacts. Available with rugged closed entry contacts and 0.000050 inch (1.27 μ) gold for high end applications, including military.



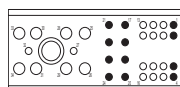
VP SERIES

VP SERIES

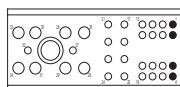
FEATURES

- ✓ Average power contact resistance is less than 0.001 ohms
- ✓ Average signal contact resistance is less than 0.005 ohms
- ✓ RoHS compliant

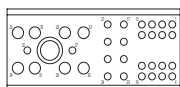
CONTACT VARIANTS



VPB 22W8*1



VPB 30W8*1



VPB 34W8*1



VPN 8W8



VPX 6W6

*1 Variants are compliant to ATCA Zone 1 connector requirements.

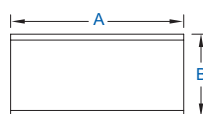
Variants shown are not actual size, for connector dimensions refer to dimensions section below.

CONTACT CURRENT RATINGS PER UL 1977

CONNECTOR VARIANT	CONTACT SIZE/TYPE	CONTACT CURRENT RATING
VPB	16 / Power	30 ampere continuous. *2
	22 / Signal / Low Power	2 amperes nominal rating.
VPN (Standard Material)	16 / Power	25 amperes *2
VPNH (High Conductivity)	16 / Power	35 amperes *2
VPX	20 / Power	20 ampere continuous. *2

*2 All contacts under load.

DIMENSIONS



Dimensions are for reference. Consult catalog or website for detailed connector dimensions.

SERIES	A	B
VPB	1.815 [46.10]*3	0.823 [20.90]*3
VPN	0.880 [22.35]	0.470 [11.94]
VPX	0.780 [19.80]*3	0.374 [9.50]*3

*3 Maximum.

Insulators: glass filled polyester, UL 94 V-0, blue color.

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 30 amps per contact in accordance to UL 1977.

Contact resistance: as low as 0.0007 ohms max. at rated current.

Voltage proof: up to 2,000 V rms

Mechanical operations: 250 couplings minimum (depending on connection system)

Termination types: PCB mount – straight and right angle (90°), solder and press-fit.

Features: sequential mating contacts; reliable polarization; integral blind mateable; high conductivity contacts; mixed density contact; large surface area contacts system. Compatible with IEEE 1101.2 conduction cooled boards and IEEE 1386 PMC cards. Available with rugged closed entry contacts and 0.000050 inch (1.27 μ) gold for high end applications, including military.



POWER CONNECTION SYSTEMS

PCS SERIES

SIZE 16 CONTACT VARIANTS



PLA 03



PLA 04

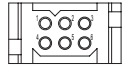


PLA 06

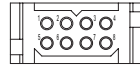


PLA 08

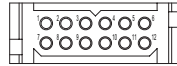
Variants shown are not actual size, for connector dimensions refer to dimensions section below.



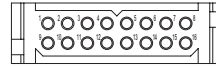
PLB 06



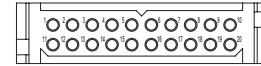
PLB 08



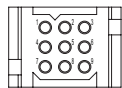
PLB 12



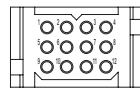
PLB 16



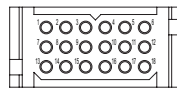
PLB 20



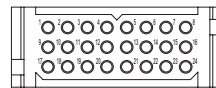
PLC 09



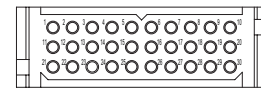
PLC 12



PLC 18



PLC 24

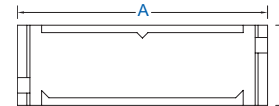


PLC 30

CONTACT CURRENT RATINGS PER UL 1977

CONNECTOR VARIANT	STANDARD CONTACTS	CONNECTOR VARIANT	HIGH CONDUCTIVITY CONTACTS
PLA03	32 amps	PLAH03	42 amps
PLB12	25 amps	PLBH12	32 amps
PLC30	18 amps	PLCH30	24 amp

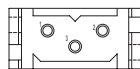
DIMENSIONS



Dimensions are for reference. Consult catalog or website for detailed connector dimensions.

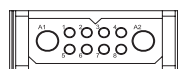
# OF CONTACT ROWS	# OF SIZE 16 CONTACTS	A ±0.020 [0.51]	B
Single Row (PLA prefix)	Three (03)	1.126 [28.60]	0.408 [10.36]
	Four (04)	1.324 [33.63]	
	Six (06)	1.718 [43.64]	
	Eight (08)	2.112 [53.64]	
Double Row (PLB prefix)	Six (06)	1.126 [28.60]	0.606 [15.39]
	Eight (08)	1.324 [33.63]	
	Twelve (12)	1.718 [43.64]	
	Sixteen (16)	2.112 [53.64]	
	Twenty (20)	2.506 [63.65]	
Triple Row (PLC prefix)	Nine (09)	1.126 [28.60]	0.802 [20.37]
	Twelve (12)	1.324 [33.63]	
	Eighteen (18)	1.718 [43.64]	
	Twelve-four (24)	2.112 [53.64]	
	Thirty (30)	2.506 [63.65]	

OTHER VARIANTS



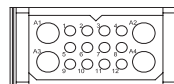
PLB 3W3

Three (3) size 12, 40 amp contacts



PLB 10W2

Two (2) size 8, 70 amp contacts and eight (8) size 20 contacts



PLC 16W4

Four (4) size 8, 70 amp contacts and twelve (12) size 20 contacts

Insulators: glass filled polyester, UL 94 V-0. High temperature options available upon request.

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 42 amps per contact in accordance to UL 1977

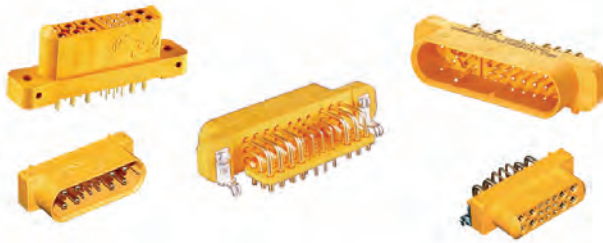
Contact resistance: as low as 0.0003 ohms max. at rated current

Voltage proof: 2,000 V rms per IEC 60512-2, Test 4a, Method C

Mechanical operations: 500 couplings per IEC 60512-5

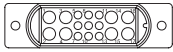
Termination types: cable and panel mount – crimp or solder, PCB mount – straight and right angle (90°), solder and press-fit

Features: integral locking system; sequential mating contacts; reliable polarization, blind mateable; cable backshells / stain relief; safety shrouded contacts, mixed density contacts



GOLDFISH

CONTACT VARIANTS



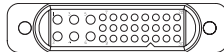
GFSH 89

Eight (8) Size 16 and
Nine (9) Size 22 Contacts



GFSH 109

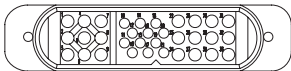
Ten (10) Size 16 and
Nine (9) Size 22 Contacts



GFSH 624

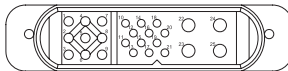
Six (6) Size 16 and
Twenty-four (24) Size 22 Contacts

Variants shown are not actual size,
for connector dimensions refer to
dimensions section below.



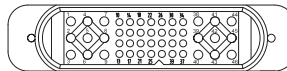
GFSH 02

Twenty-one (21) Size 16 and
Twelve (12) Size 20 Contacts



GFSH 435

Four (4) Size 12, Nine (9) Size 16 and
Twelve (12) Size 20 Contacts

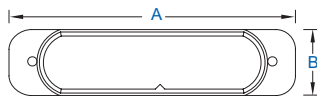


GFSH 928

Eighteen (18) Size 16 and
Twenty-eight (28) Size 22 Contacts

GOLDFISH SERIES

DIMENSIONS



Dimensions are for
reference. Consult
catalog or website for
detailed connector
dimensions.

SERIES	A	B
GFSH 89	1.677 [42.60]	0.445 [11.30]
GFSH 109	2.205 [56.00]	0.492 [12.50]
GFSH 624	2.205 [56.00]	0.492 [12.50]
GFSH 02	2.869 [72.86]	0.661 [16.79]
GFSH 435	2.869 [72.86]	0.661 [16.79]
GFSH 928	2.869 [72.86]	0.661 [16.79]

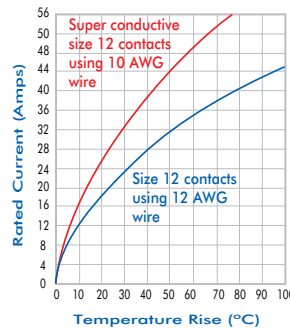
CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT MATERIAL	CONTACT CURRENT RATING
SIZE 22	Standard	3 amperes, nominal
SIZE 20	Standard	5 amperes, nominal.
SIZE 16	Standard	20 amperes, continuous
	HC*2	30 amperes, continuous
SIZE 12	Standard	35 amperes, continuous
	HC*2	50 amperes, continuous

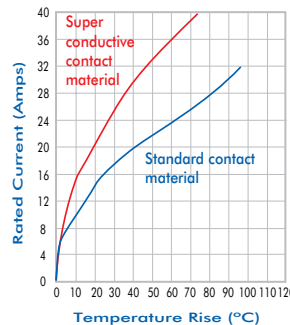
*2 HC = High Conductivity Contact Material.

TEMPERATURE RISE CURVE

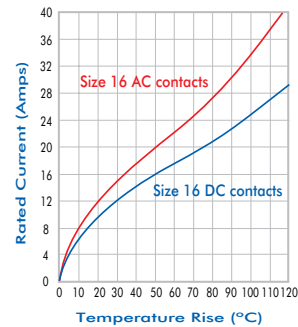
Tested per IEC Publication 60512-3, Test 5a



Curves developed using a GFSH435*
connector and wires of 10 AWG and
12 AWG. All size 12 contact under load.



Curves developed using a GFSH02*
connector and 12 AWG wires.
All size 16 contact under load.



Curves developed using a GFSH89*
connector with 12 AWG wire.
All size 16 contact under load.

Insulators: glass filled nylon, UL 94 V-0, gold color.

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 50 amps per contact.

Contact resistance: as low as 0.0007 ohms max. at rated current

Voltage proof: 1000 V rms for size 20 and 22 contacts; up to 1500 V rms for size 12 and 16 contacts

Mechanical operations: up to 1,000 couplings

Termination types: panel mount – crimp, PCB mount – straight and right angle (90°), solder and press-fit

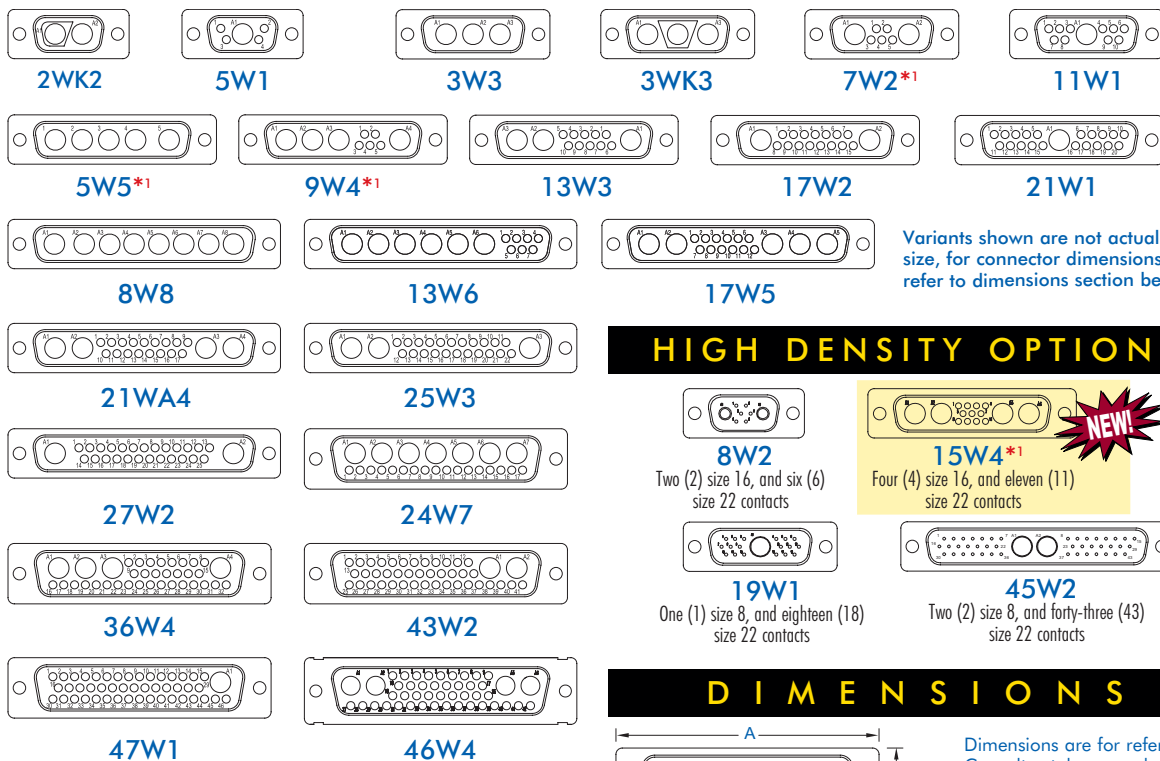
Features: hot plug capability; sequential mating contacts; reliable polarization; blind mateable; mixed density contacts.



μTCA®

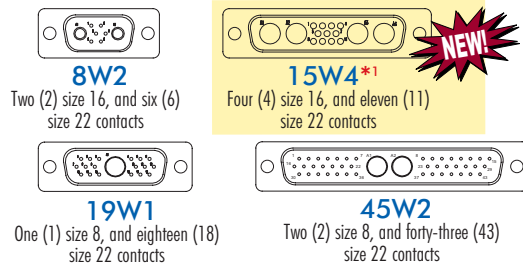
COMBO-D D-SUBMINIATURE

CONTACT VARIANTS

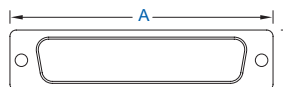


Variants shown are not actual size, for connector dimensions refer to dimensions section below.

HIGH DENSITY OPTIONS



DIMENSIONS



Dimensions are for reference. Consult catalog or website for detailed connector dimensions.

CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT CURRENT RATING	INITIAL CONTACT RESISTANCE	VOLTAGE PROOF
SIGNAL / LOW POWER	7.5 amperes nominal	0.008 ohms max.	1,000 V rms
POWER (Standard Material)	up to 70 amps	0.0005 ohms max.	1,000 V rms
POWER (High Conductivity)	up to 100 amps	0.00035 ohms max.	1,000 V rms
SHIELDED	-	0.008 ohms max.	1,000 V rms
HIGH VOLTAGE	-	0.008 ohms max.	2,700 V rms

SHELL SIZE	VARIANTS	A	B
1	2W2K, 5W1, 8W2	1.213 [30.81]	0.494 [12.55]
2	3W3, 3WK3, 7W2, 11W1, 19W1	1.541 [39.14]	0.494 [12.55]
3	5W5, 9W4, 13W3, 17W2, 21W1	2.088 [53.04]	0.494 [12.55]
4	8W8, 13W6, 17W5, 21WA4, 25W3, 27W2, 45W2	2.729 [69.32]	0.494 [12.55]
5	24W7, 36W4, 43W2, 47W1	2.635 [66.93]	0.605 [15.37]
6	46W4	2.729 [69.32]	0.668 [16.97]

Insulators: glass filled polyester, per Mil-M-24519 UL 94 V-0, blue color and composite.

Contacts: male contacts - precision machined brass alloy; female - precision machined high tensile copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 100 amps per contact in accordance to UL 1977.

Contact resistance: as low as 0.00035 ohms max., per IEC 60512-2, test 2b.

Voltage proof: up to 1,000 V rms

Mechanical operations: 500 couplings minimum (depending on connection system)

Termination types: cable and panel mount – crimp or solder; PCB mount – straight and right angle (90°), solder and press-fit.

Features: sequential mating contacts; blind mateable; high conductivity contacts; shielded contacts; high voltage contacts; mixed density contacts; thermocouple contacts; air line couplers; connector savers.

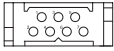


POSITRONIC[®]
GLOBAL *Connector* SOLUTIONS

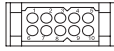
Power Connector Selection Guide

DRAGONFLY

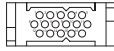
CONTACT VARIANTS



DF 07
Seven (7)
Size 16 Contacts



DF 10
Ten (10)
Size 20 Contacts



DF 16
Sixteen (16)
Size 22 Contacts

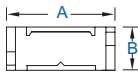


DF 04
Two (2) Size 16
and Two (2)
Size 22 Contacts

Variants shown are not actual size,
for connector dimensions refer to
dimensions section below.

DRAGONFLY

DIMENSIONS

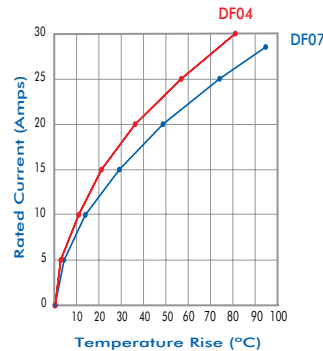


Dimensions are for reference.
Consult catalog or website for detailed
connector dimensions.

SERIES	A	B
DF 04	0.717 [18.20]	0.283 [7.20]
DF 07	1.087 [27.60]	0.433 [11.00]
DF 10	1.087 [27.60]	0.433 [11.00]
DF 16	1.087 [27.60]	0.433 [11.00]

TEMPERATURE RISE CURVE

Tested per IEC Publication 60512-3, Test 5a



Curves developed separately
using (a) DF04 connectors and
12 AWG wires and (b) DF07
connectors and 12 AWG wires.
All power contacts under load.

**AUTOSHUNT
SERIES**

CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT CURRENT RATING
Size 22	3 amperes, nominal
Size 20	7.5 amperes, nominal. 12.0 amperes with 18 AWG wire. Consult factory for details.
Size 16	20 amperes, continuous

OTHER VARIANT



DFS 02
AutoShunt Connector
Two (2) Size 16
Power Contacts

AutoShunt Series contacts are
"shorted together" upon disconnect.

Six (6) pole version also available.

Insulators: glass filled nylon, UL 94 V-0, aqua green or black color.

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 20 amps per contact.

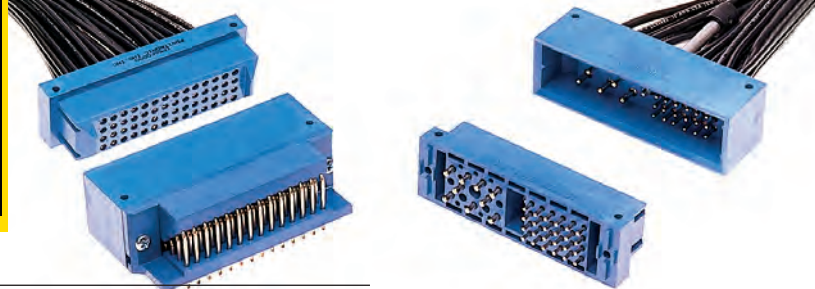
Contact resistance: as low as 0.003 ohms max. at rated current

Voltage proof: 1000 V rms for size 20 and 22 contacts; 1500 V rms for size 16 contacts

Mechanical operations: up to 10,000 couplings

Termination types: cable and panel mount – crimp or solder, PCB mount – straight and right angle (90°), solder and press-fit

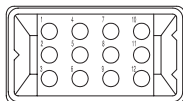
Features: high density power & signal contacts, integral locking system / hoods.



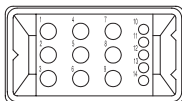
INFINITY/MINI-INFINITY

CONTACT VARIANTS

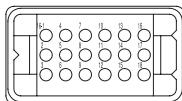
INFINITY / MINI-INFINITY SERIES



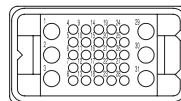
MMIP 12W12
Twelve (12)
Size 12 Contacts



MMIP 14W9
Nine (9) Size 12 and
Five (5) Size 20 Contacts

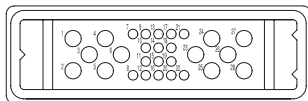


MMIP 18
Eighteen (18)
Size 16 Contacts

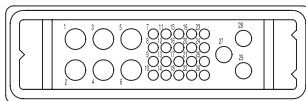


MMIP 31W6
Six (6) Size 12 and
Twenty-five (25) Size 20 Contacts

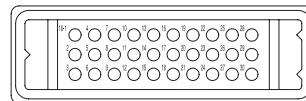
Variants shown are not actual size,
for connector dimensions refer to
dimensions section at the top of
page 5.



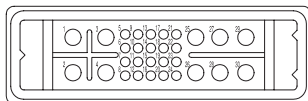
MIP 28W12
Twelve (12) Size 12 and
Sixteen (16) Size 20 Contacts



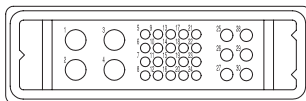
MIP 29W9
Six (6) Size 8, Twenty (20) Size 20 and
Three (3) Size 12 Contacts



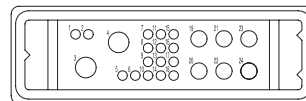
MIP 30
Thirty (30) Size 16 Contacts



MIP 30WA10
Ten (10) Size 12 and
Twenty (20) Size 20 Contacts

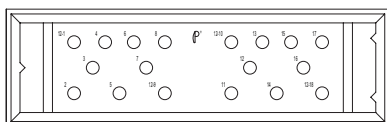


MIP 30WB10
Four (4) Size 8, Twenty (20) Size 20 and
Six (6) Size 16 Contacts

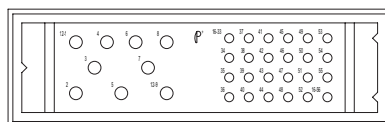


MIP 24W8
Two (2) Size 8, Sixteen (16) Size 20 and
Six (6) Size 12 Contacts *1

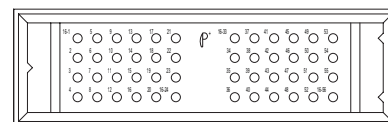
Note: *1 Size 8 are available in high
performance or standard contacts.



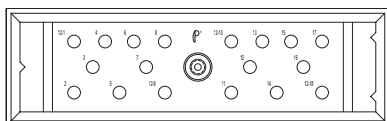
IP 18
Eighteen (18) Size 12 Contacts



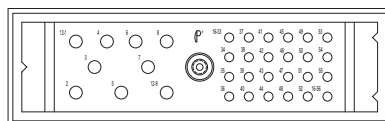
IP 33W9
Nine (9) Size 12 and Twenty-four (24) Size 16 Contacts



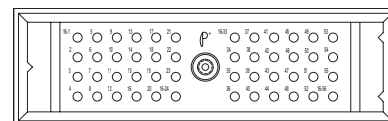
IP 48
Forty-four (48) Size 16 Contacts



IP 18
Eighteen (18) Size 12 Contacts with Jackscrew *2



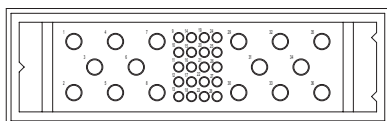
IP 33W9
Nine (9) Size 12 and
Twenty-four (24) Size 16 Contacts with Jackscrew *2



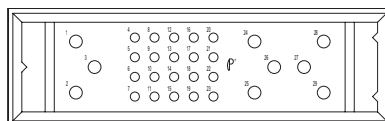
IP 48
Forty-four (48) Size 16 Contacts with Jackscrew *2

Note: *2

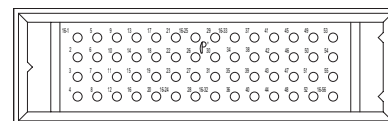
Male connectors are offered with rotating jackscrews. Female connectors are offered with fixed jackscrews.



IP 36W16
Sixteen (16) Size 12 and Twenty (20) Size 20 Contacts



IP 29W9
Nine (9) Size 12 and Twenty (20) Size 16 Contacts



IP 56
Fifty-six (56) Size 16 Contacts



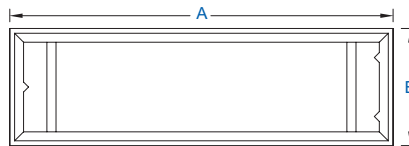
INFINITY/MINI-INFINITY

**INFINITY /
MINI-INFINITY
SERIES**

CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT CURRENT RATING
Size 20	5 amperes
Size 16	20 amperes, continuous
Size 12	40 amperes, continuous
Size 8	60 amperes, continuous

DIMENSIONS



Dimensions are for reference. Consult catalog or website for detailed connector dimensions.

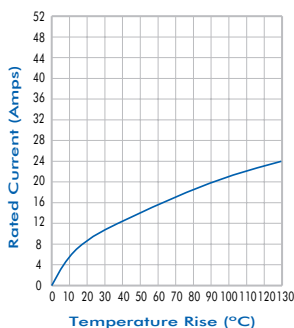
SERIES	A	B
MMIP	1.787 [45.40]	0.976 [24.80]
MIP	3.051 [77.50]	0.976 [24.80]
IP	3.839 [97.50]	1.173 [29.80]

TEMPERATURE RISE CURVES

Tested per IEC Publication 60512-3, Test 5a
All contacts under load.

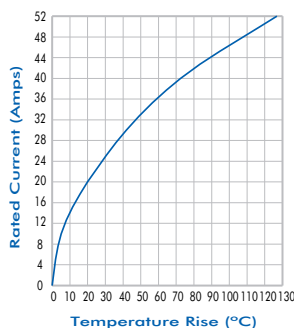
INFINITY SERIES

SIZE 16 CONTACTS



Curve developed using a mated IP56M400A1 and IP56F300A1, both terminated to 12 AWG wire.

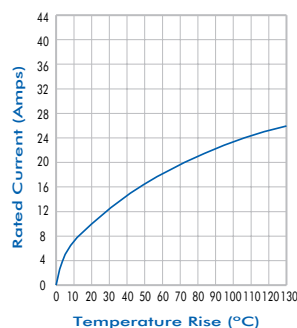
SIZE 12 CONTACTS



Curve developed using a mated IP33W9M0000 loaded with MC612N contacts and IP33W9F0000 loaded with FC612N2 contacts, both terminated to 12 AWG wire. Size 16 contact positions not filled and tested.

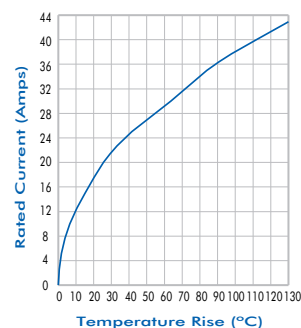
MINI-INFINITY SERIES

SIZE 16 CONTACTS



Curve developed using a mated MIP30M0000 loaded with MC112N contacts and MIP30F0000 loaded with FC112N2 contacts, both terminated to 12 AWG wire.

SIZE 12 CONTACTS



Curve developed using a mated MIP30WA10M0000 loaded with MC612N contacts and MIP30WA10F0000 loaded with FC612N2 contacts, both terminated to 12 AWG wire. Size 20 contact positions not filled and tested.

NOTES:

- 1) These temperature rise curves were developed using standard contact materials. High conductivity contact materials are available. These alternate materials allow for more favorable current carrying performance; consult Technical Sales for details.
- 2) Consult Technical Sales for Electrical and Mechanical characteristics of press-fit terminations.

Insulators: glass filled polyester, UL 94 V-0, blue color

Contacts: precision machined copper alloy. Plated gold over nickel. Other finishes available upon request.
Solder-coated terminations optional

Electrical characteristics: contact current ratings to 100 amps per contact in accordance to UL 1977

Contact resistance: as low as 0.0005 ohms max. at rated current

Voltage proof: 2000 V rms per IEC 60512-2, Test 4a, Method C

Mechanical operations: 200 couplings minimum (depending on connection system)

Termination types: cable and panel mount – crimp or solder, PCB mount – straight and right angle (90°), solder and press-fit

Features: superior power density, sequential mating contacts, recessed female contacts. Integral keyed polarization, blind mateable; hot-plug capability, shielded contacts, mixed density contacts.



POSITRONIC®
GLOBAL *Connector* SOLUTIONS

Power Connector Selection Guide

MODULAR TOOLING
ALLOWS DELIVERY OF A
MULTITUDE OF VARIANTS!

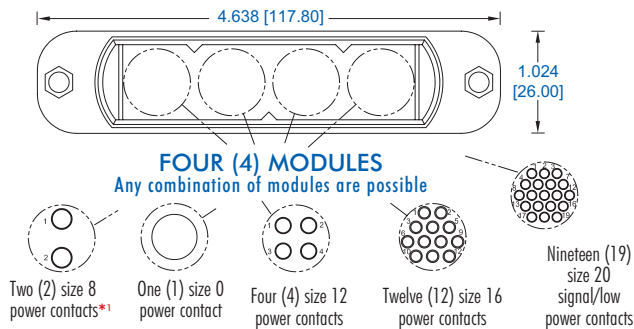
GG SERIES CONNECTORS

CONTACT VARIANT & DIMENSIONS

GG SERIES

TOTAL OF 256 VARIANTS

Variants shown are not actual size.



*1 Contact Technical Sales for availability.

Dimensions are for reference. Consult catalog or website for detailed connector dimensions.

CONTACT CURRENT RATINGS PER UL 1977

CONTACT SIZE	CONTACT MATERIAL	CONTACT CURRENT RATING	CONTACT RESISTANCE	WORKING VOLTAGE
SIZE 0	Standard	175 amps	0.00038 ohms	250 V RMS
	HC*2	200 amps	0.00012 ohms	
SIZE 12	Standard	35 amps	0.0016 ohms	500 V RMS
	HC*2	50 amps	0.0005 ohms	
SIZE 16	Standard	20 amps	0.0024 ohms	500 V RMS
	HC*2	28 amps	0.0012 ohms	
SIZE 20	Standard	5 amps	0.0036 ohms	333 V RMS

*2 HC = High Conductivity Contact Material.

Insulators: glass filled nylon, UL 94 V-0, gold color.

Contacts: precision machined copper alloy. Plated gold flash over nickel. Other finishes available upon request.

Electrical characteristics: contact current ratings to 200 amps per contact in accordance to UL 1977.

Contact resistance: as low as 0.00008 ohms, per IEC 60512-2, test 2b.

Voltage proof: up to 3,000 V RMS.

Mechanical operations: 1,000 cycles.

Termination types: cable and panel mount – crimp, solder or buss bar. Contact Technical Sales for PCB solder type.

Features: Excellent blind mating; sequential mating options



POSITRONIC®
GLOBAL *Connector* SOLUTIONS

Quality Solutions
Reliable Service

POSITRONIC INDUSTRIES, INC.

Springfield, Missouri USA • 800-641-4054 • info@connectpositronic.com

POSITRONIC INDUSTRIES, S.A.S.

Auch, France • 33 5 62 63 44 91 • contact@connectpositronic.com

POSITRONIC ASIA PTE LTD.

Singapore • (65) 6842 1419 • singapore@connectpositronic.com

www.connectpositronic.com

Connector Excellence®

Positronic Provides Complete Capability

Experience

- Founded in **1966**
- **Involvement** in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG® and VITA.
- Introduction of new and **unique connector products** to the electronics industry.
- Patent holder for many **unique connector features and manufacturing techniques**.
- **Vertically integrated** manufacturing – raw materials to finished connectors.

Technology

- **Expertise** with solid machined contacts provides a variety of high reliability connectors including high current density power connectors.
- Quality Assurance lab is **capable of testing** to IEC, EIA, U.L., C.U.L., military and customer-specified requirements.
- **In-house design and development** of connectors based on market need or individual customer requirements.
- **Internal manufacturing capabilities** include automatic precision contact machining, injection molding, stamping, plating operations and connector assembly.
- **Manufacturing locations** in southwest Missouri, U.S.A. (headquarters); Puerto Rico, France, China, Singapore, and India. Total square footage: 369,000.

Support

- **Quality Systems:** Select locations qualified to ISO9001:2000, ISO14001, AS9100, MIL-STD-790 and customer “dock to stock” programs. Applicable products qualified to MIL-DTL-24308, SAE AS 39029, DESC 85039, MIL-DTL-28748, Space D32, Goddard S-311-P-4 and Goddard S-311-P-10.
- Compliance to a variety of international and customer specific **environmental requirements**.
- Large **in-house inventory** of finished connectors. Customer specific **stocking programs**.
- Factory direct **technical sales support** in major cities worldwide.
- **One-on-one customer support** from worldwide factory locations.
- World class **web site**.
- **Value-added solutions** and willingness to **develop custom products** with reasonable price and delivery.

Mission Statement

“To utilize product flexibility and application assistance to present interconnect solutions which represent value to customers worldwide.”



Regional Headquarters

Springfield, MO



Auch, France



Singapore



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

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

Unless otherwise specified, **dimensional tolerances** are:

- 1) ± 0.001 inches [0.03 mm] for male contact mating diameters.
- 2) ± 0.003 inches [0.08 mm] for contact termination diameters.
- 3) ± 0.005 inches [0.13 mm] for all other diameters.
- 4) ± 0.015 inches [0.38 mm] for all other dimensions.

POSITRONIC® IS AN ITAR REGISTERED COMPANY

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®, Positronic Industries, Inc.®, P+ logo, Positronic Global Connector Solutions®, Connector Excellence® and their logo designs are registered trademarks of Positronic Industries, Inc.

Connector Excellence[®]

Positronic HIGH RELIABILITY Products

POWER



FEATURES:

- High current density
- Energy saving, low contact resistance
- Hot swap capability
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating
- Sequential mating
- Large surface area contact system
- Wide variety of accessories
- Customer-specified contact arrangements
- Modular tooling which produces a single piece connector insert

Contact Sizes: 0, 8, 12, 16, 20, 22 and 24
Current Ratings: To 200 amperes per contact
Terminations: Crimp and panel mount, straight solder, right angle (90°) solder, straight compliant press-fit and right angle (90°) compliant press-fit
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41

D-SUBMINIATURE



FEATURES:

- Four performance levels available for best cost/performance ratio: professional, industrial, military and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power

Contact Sizes: 8, 16, 20 and 22
Current Ratings: To 100 amperes
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, straight compliant press-fit and right angle (90°) compliant press-fit
Configurations: Multiple variants in both standard and high densities, seven shell sizes
Qualifications: MIL-DTL-24308, Goddard Space Flight S-311-P-4, Goddard Space Flight S-311-P-10, SAE AS 39029, IP65, IP67

RECTANGULAR



FEATURES:

- Two performance levels available: industrial quality and military quality
- A wide variety of accessories
- Broad selection of contact variants and package sizes
- Connector keying options

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, and straight compliant press-fit
Configurations: Multiple variants in both standard and high densities, twenty-eight package sizes
Qualifications: MIL-DTL-28748, SAE AS 39029, CCITT V.35

CIRCULAR



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

Contact Sizes: 12, 16, 20 and 22
Current Ratings: To 25 amperes nominal
Terminations: Crimp, wire solder, straight solder, and right angle (90°) solder
Configurations: Multiple variants in four package sizes
Qualifications: Environmental protection to IP67

CABLE



FEATURES:

- Shorten the supply chain and reduce additional costs and delays by "cablizing" your Positronic connector selection
- Overmolding available
- Shielded and environmentally sealed versions available
- Power cables and access boxes which meet the SAE J2496 specification

- ✓ Design assemblies in accordance with customer specifications.
- ✓ Prepare cablized connector configuration and performance specifications.
- ✓ Design each system in accordance with applicable customer, domestic, and international standards.
- ✓ Define and conduct performance and verification testing.

HERMETIC



FEATURES:

- Intended for use as an electrical feedthrough in high vacuum applications
- Leakage rate: 5 x 10⁻⁹ mbar.l/s @ vacuum 1.5 x 10⁻⁵ atm
- Signal, power, coax and high voltage versions available
- Connectors can be mounted on flange assembly per customer specification

Contact Sizes: 8, 12, 16, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Feedthrough is standard; flying leads and board mount available upon request
Configurations: See D-subminiature and circular configurations above
Compliance: Space-D32

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

NORTH AMERICAN LOCATIONS

UNITED STATES, Springfield, Missouri, Corporate Headquarters

Factory Sales and Engineering Offices (800) 641-4054 info@connectpositronic.com

PUERTO RICO, Ponce Factory

Factory Sales and Engineering Offices (800) 641-4054 info@connectpositronic.com

MEXICO

Factory Sales and Engineering Offices (800) 872-7674 info@connectpositronic.com

CANADA

Factory Sales and Engineering Offices (800) 327-8272 info@connectpositronic.com

ASIA/PACIFIC LOCATIONS

SINGAPORE, Asia/Pacific Headquarters

Factory Sales and Engineering Offices (65) 6842 1419 singapore@connectpositronic.com

ASIA, Direct Sales Offices

China -Shenzhen Sales Office	(86) 755 2643 7578	shenzhen@connectpositronic.com
China -Zhuhai Factory and Sales Office	(86) 756 3626 466	zhuhai@connectpositronic.com
China -Shanghai Sales Office	(86) 158 2907 9779	shanghai@connectpositronic.com
China -Xian/Beijing Sales Office	(86) 29 8839 5306	xian@connectpositronic.com
Korea Sales Office	(82) 31 909 8047 or 8	korea@connectpositronic.com
Taiwan Sales Office	(88) 62 2937 8775	taiwan@connectpositronic.com

JAPAN, Direct Sales Offices

Sales and Engineering Offices (81) 3 5812 7720 japan@connectpositronic.com

INDIA, Direct Sales Offices

Factory Sales and Engineering Offices	(91) 20 2439 4810	india@connectpositronic.com
Bangalore Sales Office		bangalore@connectpositronic.com
New Delhi Sales Office		delhi@connectpositronic.com

ASIA/PACIFIC, Technical Agents

Technical Agents in Malaysia, Australia, New Zealand, Philippines, Hong Kong, Vietnam, Thailand

EUROPEAN LOCATIONS

FRANCE, Auch Factory, European Headquarters

Factory Sales and Engineering Offices 33 5 62 63 44 91 contact@connectpositronic.com

EUROPE, Direct Sales Offices

Northern France Sales Office	33 1 45 88 13 88	jchalaux@connectpositronic.com
Southern France Sales Office	33 5 62 63 44 91	plafon@connectpositronic.com
Italy Sales Office	39 02 54 1161 06	rmagni@connectpositronic.com
Germany Sales Office	49 2351 63 47 39	cbouche@connectpositronic.com
UK Sales Office	44 1993 831 628	lbridwell@connectpositronic.com

EUROPE, Technical Agents

Technical Agents in Austria, Benelux, Eastern Europe Countries, Greece, Ireland, Russia, Scandinavia, Spain, Switzerland and the United Kingdom

MIDEAST, Technical Agents

Technical Agents in Israel and Turkey



POSITRONIC
GLOBAL *Connector* SOLUTIONS

POSITRONIC INDUSTRIES, INC.

423 N Campbell Avenue • PO Box 8247 • Springfield, MO 65801
Tel (417) 866-2322 • Fax (417) 866-4115 • Toll Free (800) 641-4054
info@connectpositronic.com

POSITRONIC INDUSTRIES, S.A.S.

Zone Industrielle d'Engachies • 46 Route d'Engachies
France 32020 Auch Cedex 9
Telephone 33 5 62 63 44 91 • Fax 33 5 62 63 51 17
contact@connectpositronic.com

POSITRONIC ASIA PTE LTD.

3014A Ubi Road 1 #07-01 • Singapore 408703
Telephone (65) 6842 1419 • Fax (65) 6842 1421
singapore@connectpositronic.com

LOCALIZATIONS