1966
Founded as an aerospace component manufacturer

1978
Qualified to MIL-DTL-28748

1980
Qualified to MIL-DTL-24308 & MIL-C-39029

1983
Operations in Puerto Rico began

1991
Operations in Europe began
Since 1966, Positronic has provided connector solutions to customers around the world.

Positronic offers a wide variety of power, D-subminiature, circular and rectangular connector products and accessories. Value-added services are also available.

Our connectors feature precision machined contacts and can be provided to industrial or military performance levels to meet various target price points.

Our products are used in all areas of the electronics industry from basic power supplies to advanced weapon systems.
The Engineering department accomplishes a variety of key company objectives such as designing new products for standard and customer-specific applications, modifying existing products to meet customer demands, undertaking value engineering initiatives, and offering technical support for existing product lines. A focus on 3D modeling during the design process is augmented by in-house 3D printing capabilities.

With a variety of test equipment to choose from, the Positronic test lab is certified to carry out a variety of tests to IEC standards plus QPL testing to military standards MIL-DTL-24308, SAE AS39029 and MIL-DTL-28748. In addition, the lab is approved by UL as part of the Client Test Data program and has the ability to verify product performance to IP65 and IP67 requirements.

The Tooling department has a host of capable machines like CNCs and EDMs that are used to manufacture punch press dies, molds, assembly fixtures, cams and other tools for in-house use. The department also manufactures assembly tools used by Positronic customers worldwide.

The Molding department houses multiple thermoplastic and thermoset plastic molding machines that are used to mold connector insulators, backshells, angle brackets, cable clamps and other plastic accessories. Overmolding is also available through the Positronic cable assembly divisions.

One of the core competencies of Positronic is screw machine technology. Across all locations, Positronic has over 200 automatic lathes to manufacture thousands of varieties of electrical contacts for use in its broad connector product lines. These machines are also used to manufacture certain types of component hardware.
Positronic has a robust TQM program and is AS9100/ISO9001 compliant at various locations. The QA department manages continuous improvement initiatives to ensure quality is designed into the product through rigid process control and a dedicated Quality Engineering staff. The company is also certified to act as a Designated Supplier Quality Representative (DSQR) for some of the world’s most respected companies.

Positronic has multiple stocking locations around the world for both components and finished goods. Finished goods are available to ship within 1 business day from the time the order is received and PosiShop, the e-Commerce division of Positronic, offers thousands of products for sale online.

Positronic’s manufacturing processes and proprietary equipment for in-house use include automated, high-speed assembly tools and robotic equipment used to maximize efficiency while minimizing manufacturing defects.

Positronic has an extensive sales and support network all over the world with key regional offices in the USA, France, India, Singapore and China. In addition to many highly trained direct sales staff, the company also partners with electronics distributors in strategic parts of the world to better serve the customers in those areas.

The internal plating shop applies gold, nickel, copper, zinc, tin, chromate conversion, electroless nickel and anodic coatings to connector components prior to the assembly process. Plating inspection technology exists to verify plating thickness, adhesion and appearance to meet military specifications.

The Assembly department handles finished connector assembly along with a variety of secondary manufacturing operations such as slotting, drilling, tapping, milling, depressing, sleeving, stripping and reeling, among others.

Manufacturing Engineering designs and implements state of the art manufacturing processes and proprietary equipment for in-house use. This includes automated, high-speed assembly tools and robotic equipment used to maximize efficiency while minimizing manufacturing defects.
OUR FOCUS

POWER ELECTRONICS
INDUSTRIAL
COMMERCIAL AEROSPACE
TELECOM / DATACOM
DEFENSE
TEST & INSTRUMENTATION
SPACEFLIGHT
TRANSPORTATION
MEDICAL
OIL & GAS
OUR STRENGTHS

- SOLID MACHINED, LOW RESISTANCE CONTACTS
- POWER CONNECTORS
- RECTANGULAR CONNECTORS
- CUSTOM CONNECTOR DEVELOPMENT
- POSIBAND CONTACT TECHNOLOGY
- CABLE ASSEMBLIES
- E-COMMERCE
- SERVICE & SUPPORT
### TECH SPECS

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<thead>
<tr>
<th>FAMILY</th>
<th>SCORPION</th>
<th>LOW-PROFILE SCORPION</th>
<th>PANTHER</th>
<th>POWER CONNECTION SYSTEMS</th>
<th>GOLDFISH</th>
<th>GREAT GOLDEN</th>
<th>COMPACT POWER CONNECTOR</th>
<th>DRAGONFLY</th>
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<th>POWER INPUT CONNECTOR</th>
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<th>WONDERSUN</th>
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</table>

All Positronic contacts are machined from solid copper alloy and plated gold for maximum performance. Gold plating thickness options include gold flash, 30 microinches and 50 microinches. All insulators meet UL 94V-0 requirements.

* High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
* 28 amp rating applies to DC output and 40 amp rating applies to AC/DC input.
* 7.5 amp rating applies to GAP/GAPL series and 13 amp rating applies to GMCT series.
* The listed qualification may not apply to all products within the family. Safety agency certifications not listed here may have been pending at the time of printing. Consult sales for current status.
<table>
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<tr>
<th>ADVANCEDTCA</th>
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<th>HIGH DENSITY</th>
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www.connectpositronic.com
The most versatile modular power/signal connector on the market

FEATURES

- Modular tool design allows for practically limitless customer-defined contact arrangements
- Molding process yields a one-piece insulator
- The connector width is variable up to 101.00 mm
- High conductivity contacts available to maximize current density
- For high voltage requirements, increase creepage and clearance distances with spacer modules
- Sequential mating
- Superior blind mating
- Venting options for improved cooling
- Backshell available

<table>
<thead>
<tr>
<th>CONTACT SIZE</th>
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<td>22</td>
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* Contact Sales for size 24 options.

* High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
1. Define the requirements
2. Select the modules
3. Configure the part number

### Modules

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<tr>
<td>Spacers</td>
<td><em>Contact Sales for size 24 options.</em></td>
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*Contact Sales for size 24 options.*
A low-profile (8.20mm) version of the modular Scorpion family

**FEATURES**

- Modular tool design allows for tens of thousands of customer-defined contact arrangements
- Molding process yields a one-piece insulator
- Maximize power throughput and minimize space claim
- The connector width is variable up to 101.00 mm
- High conductivity contacts available to maximize current density
- For high voltage requirements, increase creepage and clearance distances with spacer modules
- Sequential mating
- Integrated blind mating
- Venting options for improved cooling

<table>
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<tr>
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**CONNECTORS**

- Crimp wire
- Solder PCB
- Press-fit PCB

**TERMINATIONS**

- 100K+

*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
Rugged **IP65/67** connector for use in rail, earth moving, battery and related applications

**FEATURES**

Meets EN45545-2 HL3 smoke and toxicity requirements for rail passenger applications

IP65/67 ratings are achieved in mated condition

Operating temperatures to 200°C

Contact current ratings to 35 amps per contact when using high conductivity versions

<table>
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<th>CONTACTS</th>
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**TERMINATIONS**

- Wire
- Solder
- Press-fit

**CONNECTORS**

- 1
- 3

---

*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.*
The **original blue** power connector with size 16 contacts

**FEATURES**

An industry-leading, high reliability power connector for more than 20 years

- One, two or three contact row options
- High conductivity contacts available to maximize current density
- Sequential mating
- Locking latch integrated into connector housing
- Unique right angle press-fit available
- Terminate a variety of wire gauges into a single connector
- Economical

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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
A **economical**, blind mating power/signal connector with many options

**FEATURES**

Ideal for applications requiring robust blind mating in a compact, economical package.

Mixed density (hybrid) connector offers options for AC/DC input, DC output at multiple voltages and signal control.

Touch-safe recessed female contacts.

High conductivity contacts available to maximize current density.

Sequential mating.

Excellent blind mating.

Hot swap.

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<td>22</td>
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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
Up to **400 amps** of throughput in a robust, modular housing

**FEATURES**

Fixed-length modular connector for ultra-high power applications

Select one of five different modules for each of the four insert positions

Busbar options available

Superior blind mating

Robust housing stands up to abuse

Hot swap

<table>
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</tbody>
</table>

*Ring terminal and busbar options available

*High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
Plug-in power interface for **CompactPCI** and other platforms

**FEATURES**

P47 connector (PCIH47) is compliant to the PICMG 2.11 Power Connector Interface specification also known as CompactPCI

Mixed density (hybrid) connector offers options for AC/DC input, DC output at multiple voltages and signal control

Touch-safe recessed female contacts

Keying options

Sequential mating

Coplanar mounting options

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<table>
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<th>CONTACT SIZE</th>
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<th>solder PCB</th>
<th>press-fit PCB</th>
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*High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.

*28 amp rating applies to DC output and 40 amp rating applies to AC/DC input.
Economical and **miniature** power/signal connector

**FEATURES**

Power/signal connector ideal for applications requiring high power density at an economical price

- Sequential mating
- Integrated locking system
- Maintains low contact resistance over 10,000 mating cycles
- 2-pole, auto-shunting version available

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*High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.*
Superior **blind mating**, mixed density connector with robust housing

**FEATURES**

Mixed density (hybrid) connector offers options for AC/DC input, DC output at multiple voltages and signal control

Touch-safe recessed female contacts

3-level sequential mating

High conductivity contacts available to maximize current density

Excellent blind mating compensating for 7.62mm of misalignment

Robust housing stands up to abuse

High voltage capability

Hot swap

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High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
An innovative alternative to CT shorting blocks

FEATURES

Quick and easy alternative to commonly used CT (current transformer) shorting blocks

Innovative design automatically shorts male contacts (circuits) together upon decoupling

For use in six-line “Delta” configurations or four-line “Y” configurations

Two position connector is ideal for “Ground Fault Protection” configurations

Accepts 10 and 12 AWG wire

Reduces operating cost

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* High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
POWER INPUT CONNECTOR

(3) size 12 contacts spaced ideally for AC/DC power input

FEATURES

- Screw termination facilitates field installation
- Sequential mating
- Hot swap

WONDERSUN

Push-pull, single pole connector that is building-block capable

FEATURES

- Modular design allows side-by-side stacking
- Push/pull locking feature is ideal for breakaway applications and provides auditory/tactile feedback
- Ideal as a battery or busbar disconnect
- Hot swap

SAFETY SHROUD

Shrouded, touch-safe power connector in 5 and 7-pin versions

FEATURES

- Prevents unsafe exposure to both male and female contacts
- High voltage capability
- Hot swap

VITA 41 (VXS)

System power interface for VITA 41 systems

FEATURES

- Standard power interface for VITA 41 (VXS) systems
- Ultra-miniature
- Three-level sequential mating
AdvancedTCA
THE PICMG 3.0 AdvancedTCA Zone 1 connector of choice

FEATURES

The original Zone 1 power interface for AdvancedTCA systems – copied but never duplicated

Four-level sequential mating

Internal blind mate guide

AdvancedTCA RTM
For data and management on the rear transition modules (RTM) in PICMG 3.0 R3.0

FEATURES

Common in instrumentation and high energy physics applications

Integrated blind mating

Small size minimizes space claim

CompactPCI
Plug-in power interface for CompactPCI and other platforms

FEATURES

P47 connector (PCIH47) is compliant to the PICMG 2.11 Power Connector Interface specification also known as CompactPCI

Mixed density (hybrid) connector offers options for AC/DC input, DC output at multiple voltages and signal control

Keying options
High reliability Dsubs with size 20 machined contacts

**FEATURES**

- Various performance levels for best cost/performance ratio
- #1 in the world for MIL-DTL-24308 connectors
- Mix and match connector with accessories to suit application requirements
- Stainless steel shells available for corrosion protection or near zero magnetism
- Ability to provide application-specific modifications at low MOQs
- Connector savers available for all sizes
- Popular lock lever available
- Thermocouple contact options available
- Hermetic options available

### CONTACTS

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### CONNECTORS

- 5 PACKAGE SIZES
- 5 CONFIGURATIONS

### TERMINATIONS

- crimp
- solder cup
- solder
- press-fit

- High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
High reliability D-subs with size 22 machined contacts

**FEATURES**

Maximize signal count and minimize space claim while adhering to standard D-sub shell sizes

Shell size 6 (104-pin) available

Various performance levels for best cost/performance ratio

#1 in the world for MIL-DTL-24308 connectors

Mix and match connector with accessories to suit application requirements

Stainless steel shells available for corrosion protection or near zero magnetism

Ability to provide application-specific modifications at low MOQs

Connector savers available for all sizes

Thermocouple contact options available

Hermetic options available

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*High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
Mixed density D-sub to mix signal/power/coax/HV and fiber optic

**FEATURES**

High quality, mixed density Dsubs to combine signal, power, coax, high voltage and fiber optic (ARINC 801) in a single package

Ideal for mixed mode I/O on slim “black boxes”

Shell size 6 (104-pin) available

Stainless steel shells available for corrosion protection or near zero magnetism

Ability to provide application-specific modifications at low MOQs

Connector savers available for all sizes

Thermocouple contact options available

Sequential mating options

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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
For **extreme** applications requiring non-outgassing and low magnetism

**FEATURES**

- Highest reliability D-subs for mission critical applications
- Select products qualified to NASA Goddard Space Flight Center S-311 requirements and MIL-DTL-24308 Class M
- Non-outgassing
- Near zero magnetic characteristics
- Standard and high density signal options
- Standard and high density Combo-D options
- Connector saver options
- Lightweight aluminum backshells available
WATERPROOF

For applications requiring **IP65 / IP67** waterproofing characteristics

**FEATURES**

Water and dust ingress protection to IP65 / IP67

Standard and high density signal options

Panel mount and cable versions available

Overmolding available

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<td>PCB</td>
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*Pre-wired option available

*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
**Stacked** right angle D-subs to save panel and board space

**FEATURES**

- Two D-sub connectors, vertically stacked and assembled as one unit saving panel and board space
- Assembly costs are reduced by streamlining two assembly processes into one
- Available in numerous combinations of standard density, high density, and Combo-D D-sub connectors
- Multiple spacings available between upper and lower connector bodies

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Feedthroughs for vacuum applications

FEATURES

Intended for use as an electrical feedthrough in high vacuum applications

Helium leakage rate at ambient temperature:
< $5 \times 10^{-9}$ mbar.l/s under a vacuum of $1.5 \times 10^{-2}$ mbar

Signal, power, coax and high voltage versions available

Connectors can be mounted on flange assembly per customer specification (See opposite page)

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Custom Flange Assemblies

- Diameter, bolt-hole locations, material, etc per customer requirement
- Capable of feeding through 1000s of signals
- Mix power, high voltage, coax and signal
- Single flange simplifies maintenance
OPTIK-D
ARINC 801, multimode fiber optic terminus for use in Combo-Ds

FEATURES

Ultra low insertion loss (IL) of 0.06 dB (typical)
Return loss (RL) > 45 dB
Suitable for harsh environments
More cost effective than D38999 or ARINC 600-based systems
Hybrid connector allows for mixing modes such as optical, power, signal, high voltage and/or coax

Advantages of fiber optics include:

Safe in explosive environments
High bandwidth
EMI immune
Reduced bulk and weight in wire bundles

Protected by United States Patents 8,944,697 & 9,304,263

BACKSHELLS & ACCESSORIES
For D-sub connectors

FEATURES

Lightweight aluminum backshell with internal grounding capability
Quick disconnect locking device
Multi-gender jackscrew options
Ecomonical plastic backshell options
Brackets and spacers
Float mount options
360° shielding capability
Robust connectors for rack & panel applications

FEATURES

- Rugged, durable design
- Select products certified to MIL-DTL-28748 and SAE AS39029
- Multiple keying (coding) options
- Great option for use as a ruggedized power connector
- Terminate a variety of wire gauges into a single connector
- Grounding block connector available

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<tr>
<th>PART NUMBER PREFIX</th>
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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.

*2 7.5 amp rating applies to GAP/GAPL output and 13 amp rating applies to GMCT series.
High density connectors for **rack & panel** applications

**FEATURES**

- Low-profile insulator is ideal for board-to-board stacking where reliability and ruggedness are key
- Select products certified to MIL-DTL-28748 and SAE AS39029
- Multiple keying (coding) options
- Miniature and lightweight
- 104-pin option available

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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
UTILITY
Low-profile building-block connector

FEATURES
- Low-profile, wafer design
- Stackable feature with countersink screw allows for modularity and flexibility
- Numerous options for polarization and keying
- Miniature, lightweight and economical

CIRCLE HEX
For legacy avionics applications

FEATURES
- Miniature and lightweight
- Twist ring locking device
- Round profile
- Two sizes available – standard and miniature
Size 11 and size 19 composite circular

**FEATURES**

- Lightweight, non-corrodible material
- Right angle PCB mount options
- Sequential mating
- Environmental sealing/waterproof options to IP65/67
- EMI/RFI shielded version, electroless nickel-plated
- Thermocouple contact options
- Defense quality on a budget

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**CONTACTS**

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**TERMINATIONS**

- crimp
- solder
- wire
- PCB

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*1 High conductivity contacts are available for most product families. On average, the current rating will be improved by 20-50%.
Quarter-turn economical circular

FEATURES

Quarter-turn locking system

Two sizes available – standard and miniature

Lightweight, non-corrodible, composite material

Economical

Environmental sealing/waterproof options to IP65

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Closed entry female contacts are often used to enhance the performance and reliability of connectors. In legacy designs, a sleeve is placed over a standard “split-tine” contact to achieve the closed entry feature. However, true closed entry contacts have an unbroken ring of solid material at the mating end of the contact. This design offers a degree of increased reliability while the split-tine approach has its inherent weaknesses. The PosiBand overcomes these weaknesses!

**FEATURES**

- Separates mechanical and electrical functions for superior performance
- Maximized surface area at the male/female contact interface
- Low contact resistance improves system efficiency
- Lower average insertion forces without compromising electrical performance requirements
- Contact body does not require annealing of the crimp barrel, eliminating unintentional heat treating of the mating barrel
- Qualified to SAE AS39029, MIL-DTL-24308 and the higher 40 gram separation requirement of the NASA GSFC S-311 specification
- Used primarily on size 20 and 22 contacts
- Protected by United States Patent 7,115,002
LSA & PRESS-FIT CONTACTS

LARGE SURFACE AREA (LSA)

FEATURES

Separates mechanical and electrical functions for superior performance

Low contact resistance provides minimized voltage drop across the contact

True closed entry design prevents damage to female contacts and will not allow misaligned or bent contacts to enter

Precision machined from solid copper alloy

Stable insertion and withdrawal forces throughout repeated mating cycles

BI-SPRING PRESS-FIT

FEATURES

One-piece construction from tip to tail

Low PCB insertion forces reduce board warpage and plated-through-hole damage

Designed to meet the applicable performance requirements and hole diameters as listed in the internationally recognized specification, IEC 60352-5

Protected by United States Patent 5,255,580 and 5,329,697
OVERVIEW

As is evidenced by their names, wire-to-board and wire-to-wire connector systems require at least one connector to be wire (cable) terminated. End users typically handle the cabling of their connectors in one of two ways — they assemble the cables internally or they outsource the cable assembly work to an external fabricator. In these latter cases, Positronic is ready, willing and capable to bid on your cable assembly/wire harness project. Give us an opportunity to show you how we can bring even more value to your supply chain.

SUPPORT CAPABILITIES

Design, development, engineering support and documentation

Build to customer print

Assist in expansion of qualified suppliers on BOM

Certified to ISO9001 and AS9100

Adherence to IPC620 standards

Product prototyping and first article inspection (FAI)

Electrical and mechanical testing

PRODUCTS & SERVICES

Cable and wire harness assemblies

EMI/RFI shielded assemblies

Coaxial cable assemblies

Box builds

Kitting services

Inkjet & laser marking

Bar coding & serialization

Overmolding

Potting

Electrostatic controlled work areas
Positronic stands alone in our ability and desire to provide custom connectors at low volume. The phrase "custom connectors" covers the spectrum from basic modifications to clean-sheet designs. Although we boast a large catalog of standard products, customized solutions are common for us.
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Positronic has local sales representation all over the world. To find the nearest sales office, please visit www.connectpositronic.com/sales

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The following trademarks are registered to PCI Industrial Computers Manufacturers Group: CompactPCI®, AdvancedTCA®, MicroTCA™ and PICMG™.

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 #8,944,697 #9,304,263
Other Patents Pending
*Patented in Canada, 1992