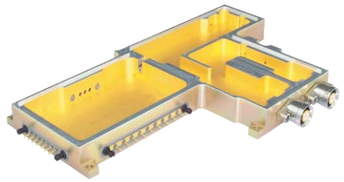
Hermetic Solutions For Extreme Environments

Integrated Packaging



Using technologies such as Kryoflex® and explosively bonded metals, SOURIAU PA&E designs and manufactures hermetic packaging for extreme environments — whether it's integrating components that protect satellites deep in space or connectors for oil-drilling tools that bore deep below the earth's surface. By pairing our Kryoflex and explosively bonded metal technologies, we can build hermetic packages using precision laser welding rather than solder joints, thus eliminating the two most common causes for hermetic package failure: solder joint fatigue and cracked glass.

RF/Microwave Connectors

SOURIAU PA&E's 50 Ohm hermetic RF/Microwave connectors are designed for use in military and commercial applications where environmental conditions require an extremely rugged and reliable hermetic seal. Low-loss Corning 7070 glass is used for dependable electrical performance. SOURIAU PA&E manufactures these hermetic RF connectors from a variety of compatible shell and contact materials, in both laser weld and solder-in styles, which provide excellent electrical and environmental performance characteristics.

Ceramic EMI Filters

SOURIAU PA&E's military-qualified Filter Products Group specializes in the design and manufacture of high-reliability low-pass EMI filters. Utilizing multi-layer ceramic discoidal capacitors and ferrite inductors, SOURIAU PA&E's engineering staff are experts at designing EMI filtering solutions for electronic circuits operating in hostile EMI environments. In-house manufacture and testing, in accordance with MIL-PRF-28861, Class B (QPL) and SOURIAU PA&E Class H, are standard practice.

Bonded Metals

SOURIAU PA&E has been the innovative leader in the explosive metal working field for over 30 years. Our customers have access to some of the world's most exciting metal working technologies, such as: Explosive Metal Bonding, Explosive Metal Forming, Explosive Shock Hardening and Dynamic Powder Metal Compaction. These high-strain rate technologies offer unique metal working advantages that can help our customers achieve the "impossible."

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ISO 9001:2008/
AS9100

Esterline Connection Technologies

HERMETIC RECTANGULAR DC CONNECTORS

SOURIAU PA&E

Hermetic Rectangular DC Connectors

- √ Junior-D, Nano-D, Sub-D, and Nano-D styles
- √ Ceramic-sealed copper alloy pins for high electrical performance
- √ Custom configurations, unique shell materials
- √ Laser weldable
- √ Proven harsh environment reliability

SOURIAU PA&E designs and manufactures custom ultra-rugged, light-weight hermetic connectors for use in extreme environments. MIL-SPEC interfaces combined with unique materials and shell design options provide the ultimate in flexibility and reliability.

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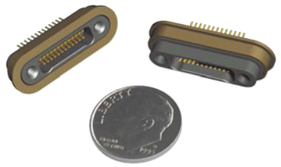


Nano-D Connectors (.025” Contact Pitch)

SOURIAU PA&E’s Nano-D connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications. Our Nano-D connectors are manufactured to exceed the requirements of MIL-DTL-32139.

PART NUMBER	DESCRIPTION
PAE-ND Series 100	DC Connector, Nano-D, Low Profile
PAE-ND Series 200	DC Connector, Nano-D, Standard Profile

Specifications: See chart on opposite page.

Junior-D™ Connectors (.030” Contact Pitch)

SOURIAU PA&E’s Junior-D connectors are miniature version of our mil-spec Sub-D connectors. They have a space savings of 70% over a standard Sub-D. Junior-D connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications.

PART NUMBER	DESCRIPTION
PAE-JD Series 100	DC Connector, Junior-D™, Low Profile, Flanged
PAE-JD Series 200	DC Connector, Junior-D, Low Profile, Not Flanged
PAE-JD Series 300	DC Connector, Junior-D, Standard Profile, Flanged
PAE-JD Series 400	DC Connector, Junior-D, Standard Profile, Double-Ended

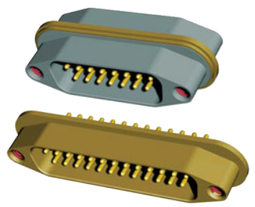
Specifications: See chart on opposite page.

Micro-D Connectors (.050” Contact Pitch)

SOURIAU PA&E’s Micro-D connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications. This connector line includes options for light-weight, all aluminum versions; a configuration for non-magnetic applications and an HTCC interface alternative. Our Micro-D connectors are manufactured to exceed the requirements of MIL-PRF-83513.

PART NUMBER	DESCRIPTION
PAE-MD Series 100	DC Connector, Micro-D, Low Profile, Flanged
PAE-MD Series 200	DC Connector, Micro-D, Low Profile, Not Flanged
PAE-MD Series 300	DC Connector, Micro-D, Standard Profile, Flanged
PAE-MD Series 400	DC Connector, Micro-D, Standard Profile, O-Ring Flanged
PAE-MD Series 500	DC Connector, Micro-D, Standard Profile, Double-Ended
PAE-MD Series 600	DC Connector, Micro-D, Standard Profile, Solderable

Specifications: See chart on opposite page.

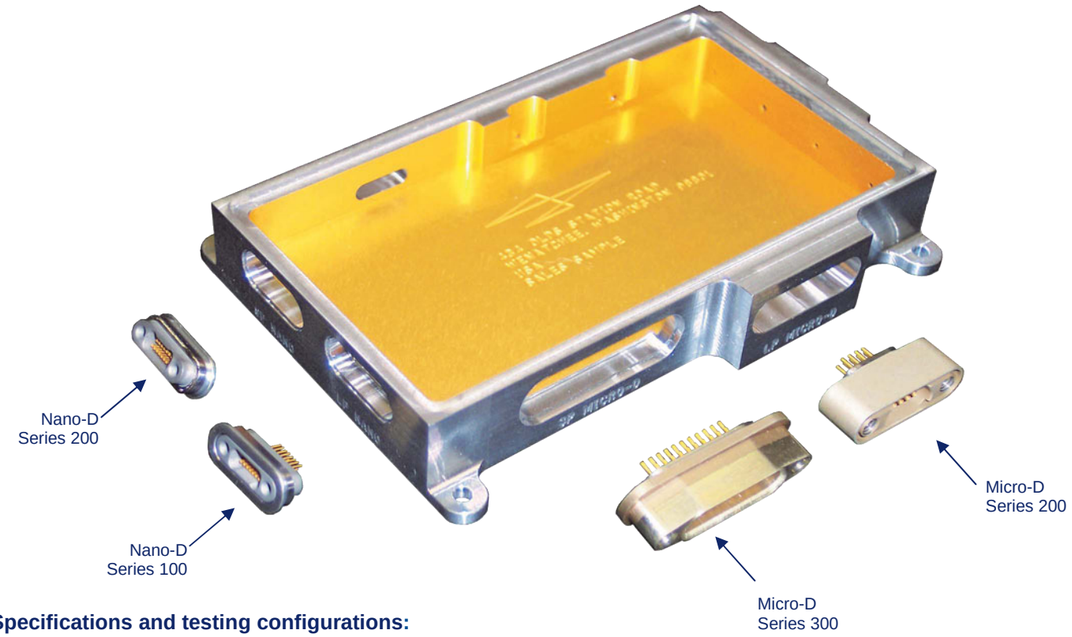


Sub-D Connectors (.100” Contact Pitch)

SOURIAU PA&E’s Sub-D connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications. Our Sub-D connectors are manufactured to exceed the requirements of MIL-DTL-24308.

PART NUMBER	DESCRIPTION
PAE-SD Series 100	DC Connector, Sub-D, Standard Profile, Flanged
PAE-SD Series 200	DC Connector, Sub-D, Standard Profile, O-Ring Flanged
PAE-SD Series 300	DC Connector, Sub-D, Standard Profile, Solderable
PAE-SD Series 400	DC Connector, Sub-D, Standard Profile, Double Ended

Specifications: See chart on opposite page.



Specifications and testing configurations:

PERFORMANCE CONFIGURATIONS		NANO-D		JUNIOR-D				MICRO-D						SUB-D			
		Standard Profile	Low Profile	Low Profile Flanged	Low Profile Not Flanged	Standard Profile Not Flanged	Standard Profile Double Ended	Low Profile Flanged	Low Profile Not Flanged	Standard Profile Flanged	Standard Profile O-ring Flanged	Standard Profile Double Ended	Standard Profile Solder-in	Standard Profile Flanged	Standard Profile O-ring Flanged	Standard Profile Solder-in	Standard Profile Double Ended
SPECIFICATIONS	MATERIAL COMPATIBILITY	Designed for Aluminum, Titanium or Iron/Nickel Alloy applications															
	CONTACT MATERIAL	303 Stainless Steel/ Inconel X-750		Beryllium Copper CDA Alloy 172/173													
	SHELL FINISH OPTIONS	Passivated, Nickel/Gold Plated or Chromate Conversion Coated as applicable															
	CONTACT FINISH	Nickel/Gold Plating															
	INTERFACE	Per MIL-DTL-32139		Proprietary				Per MIL-PRF-83513						Per MIL-DTL-24308			
	NUMBER OF CONTACTS	9, 15, 21, 25, 31, 37 and 51		9, 15, 21, 25, 31 and 37				9, 15, 21, 25, 31, 37, 51 and 100						Per MIL-DTL-24308			
	OPTIONAL SOLDER CUP	Contact SOURIAU PA&E for recommended method						Accepts 24 to 30 AWG solid/stranded wire						Contact SOURIAU PA&E for recommended method			
PERFORMANCE	LEAK RATE	Less than $1X10^{-9}$ cc/sec Helium at 1 atmospheric differential pressure															
	INSULATION RESISTANCE	Connectors provide greater than 5,000 Megohms at 500 VDC when tested in IAW MIL-STD-1344, Method 3003															
	DIELECTRIC WITHSTANDING VOLTAGE	Connectors exhibit no evidence of breakdown or flashover when tested in IAW MIL-STD-1344, Method 3003															
	CORROSION	Connectors meet salt spray test in IAW MIL-STD-1344, Method 3003															
	OPERATING TEMPERATURE	-65°C to 200°C															

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