



Interconnect Solutions for Space Industry
Standard Ranges & Specific Expertise

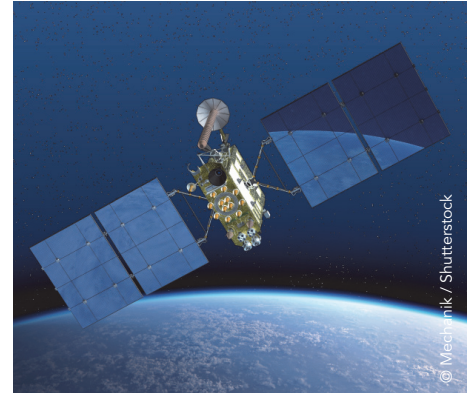
Typical applications



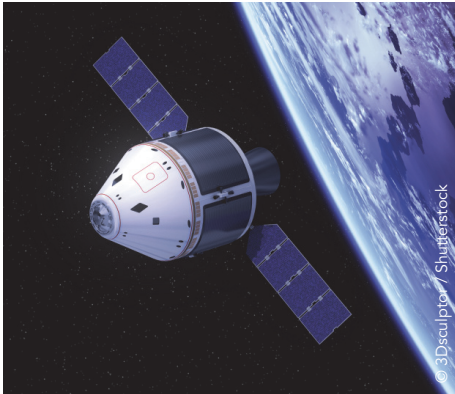
Space Station



Operations in Space



Satellites



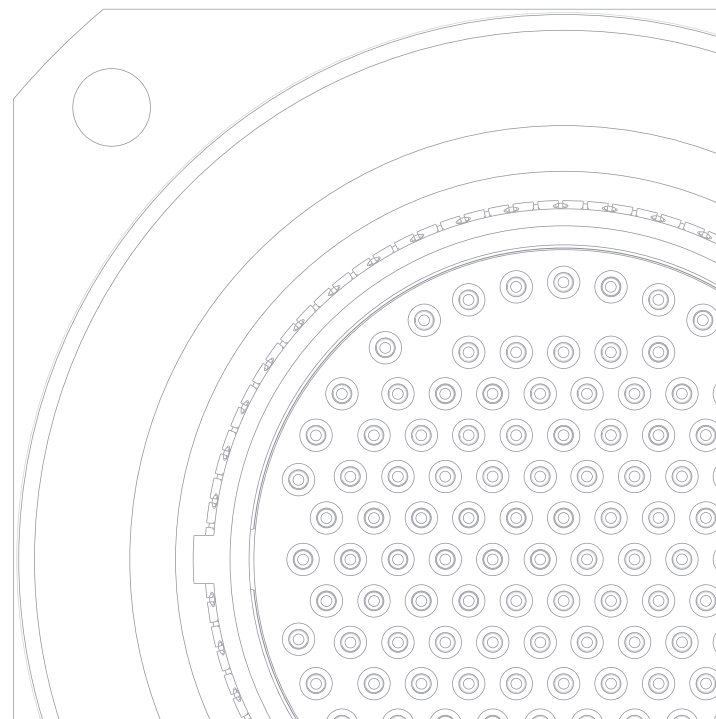
Transportation Vehicles



Launchers



Space Mission



Features & Benefits

RELIABLE

Controlled Processes, Qualified Products

ISO9001: 2008 and AS9100:200 certified sites.
NASA GSFC, ESA ESCC as well as MIL qualified products.
Customer support from concept definition to validated products delivery.

MATURE

Serving Space for More Than 50 Years

Umbilical link between the launch vehicle and the launch pad provided since the beginning of the conquest of space.
Mission proven solutions on satellites, space station and space vehicles.

EXPERT

Specific Know-how on Space

Understanding of space environment constraints such as cosmic corrosion, material outgassing, magnetic susceptibility and extreme temperatures.
In house design, production as well as tests capabilities.

LARGE OFFER

One-Stop Shopping for Interconnect

Connectors, contacts, backshells, liners w/wo overbraid for a complete and reliable interconnect solution.

VARIOUS PURPOSES

Multiple Solutions for Multiples Uses

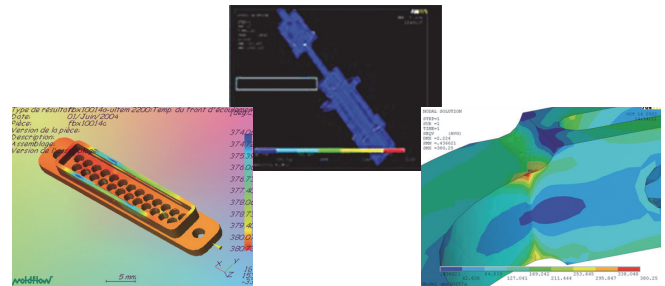
Standard or quick connect/disconnect.
Circular or rectangular profiles.
Copper or fiber optic contacts.
Hand or robotic operation.

Thanks to more than 50 years of experience in the space industry, we have accumulated a very rich knowhow to support our customers.

This expertise goes from product definition to solution validation and stringent production processes, to follow our motto: *reliable people, reliable solutions!*

Product definition

- **Material Choice:** Atomic Oxygen corrosion resistance, cold welding prevention, limited outgassing, etc.
- **Product design:** expertise on launching systems design as well as robotic operated connections
- Knowhow to support specific needs



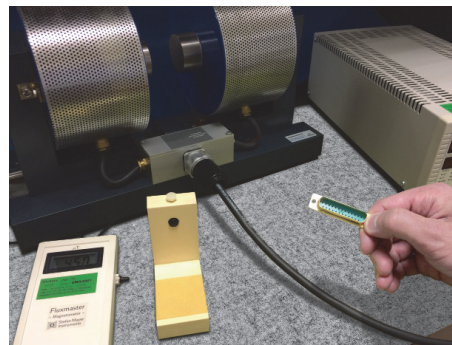
Stress and heat dissipation analysis

Validation & qualification

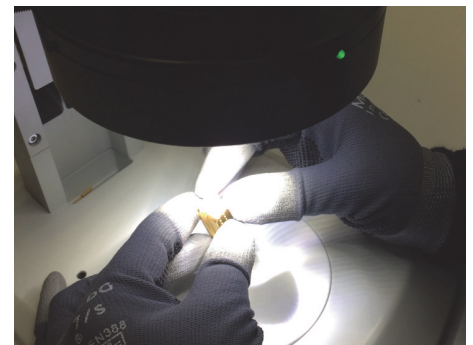
- In-house certified independent laboratory
- Capability to simulate various environments as well as to measure any key parameters



Vacuum bell for robotic operating testing
-170°C/+200°C temperature gradient



Magnetic permeability measurement



Binocular controls

Production processes

- Stringent production process
- Controlled environment
- Binocular inspection
- Rigorous traceability procedures and documentation

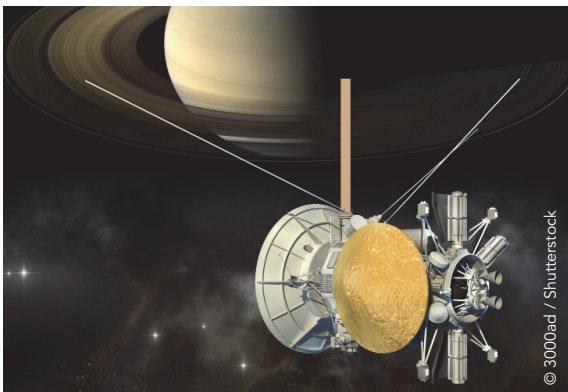


Clean Room handling



Ariane launchers

We have been on board the Ariane launchers since its early start, with **umbilical links** to the pad, in order to provide **electrical signal & power**, as well as **cooling air**. Our **cryogenic feedthrough** connectors are mounted on fuel and combusive tanks, transmitting signal through fully hermetic packaging.



Cassini Huygens

The orbiter and the launcher were launched in 1997 and have been in outer space since, providing information on Saturn and its environment. We provided the **disconnection harness and connectors** between Cassini and Huygens, with a specific design to avoid among others any cold welding risk during the release.



Cygnus

Cygnus is a pressurized module used for the resupplying of the International Space Station (ISS). Our **ESA qualified hermetic feedthrough connectors** are used to maintain the necessary pressure barrier, whereas our **8976 series connectors** are used for the link to the canadarm2 of the ISS: low insertion force contact, and misalignment compensation during connectors mating.



Rosetta and Philae

End of 2014, after 10 years of travel throughout space, the robotic lander Philae separated from the Rosetta spacecraft to land on the 67P comet. We proudly contributed to this mission, with long duration, robust, **ESA qualified connectors** used for signal transmission as well as power supply.







On launchers



Interconnect solutions used on a launcher usually operate on a shorter life cycle, as opposed to solutions mounted on orbital payloads. However, they have to perform extremely quickly and securely in a demanding environment, especially in terms of vibrations.

Our offer in four categories:

-  Umbilical connections, to link the launcher to the pad, with specific ejection technologies
-  Interstage and lanyard release connectors
-  Hermetic sealing adapted to cryogenic temperature uses
-  Aviation, Military or Space standards qualified products

Umbilical connections

Electrical and pneumatic conductors



8D8/8D9/8D36

Lanyard release connectors



Mil-DTL 38999

Series I, II & III, as well as extensions



Deadface connector

Safe interface after disconnection



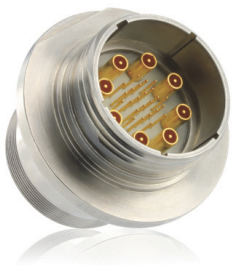
AS85049 backshells

Mil standard backshells



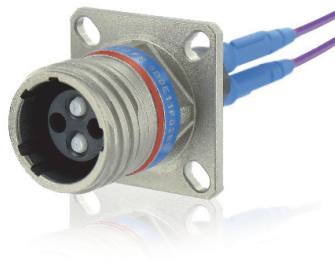
Hermetic sealing

Adapted to very low temperatures



ELIO®

Lens & Butt joint fiber optic



Liners

Cable protection






On deep space equipment



Our products designed for deep space have the commonality to be capable to withstand use during an extended period of time in the very specific space conditions.

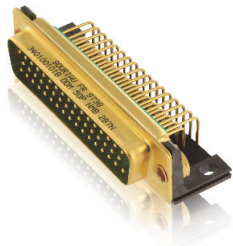
Our offer in three categories:

-  Interconnect derived from industry standards, and qualified per ESA/ESCC, NASA/GSFC or MIL standards
-  Interconnect adapted to robotic use, with an eased connect/disconnect operation
-  Mechanism to backup legacy actuators

On top of that, we have the capability to assist you to bring a product up to space level requirements, with appropriate qualification and quality system.

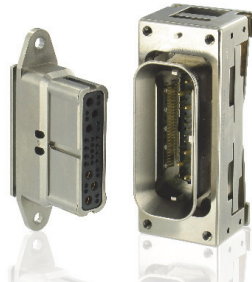
Space grade D-Sub

PCB or removable contacts



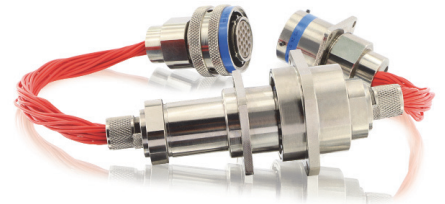
Space grade 8976

Alignment system, LIF* contacts



Disconnection harness

High performance harness



Space grade D38999

Series I, II & III



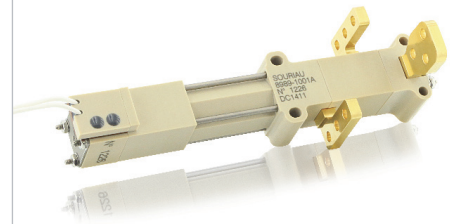
Space grade 8977

Alignment system, LIF* contacts



Non explosive actuators

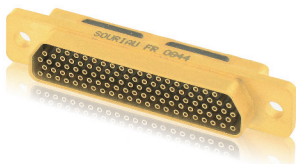
Mechanical actuator backup



(*) Low Insertion Force

Space grade microComp®

Miniature, composite

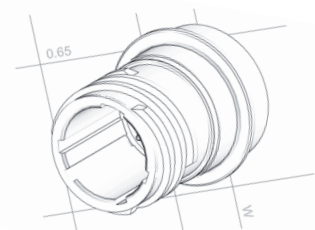


Space grade backshells

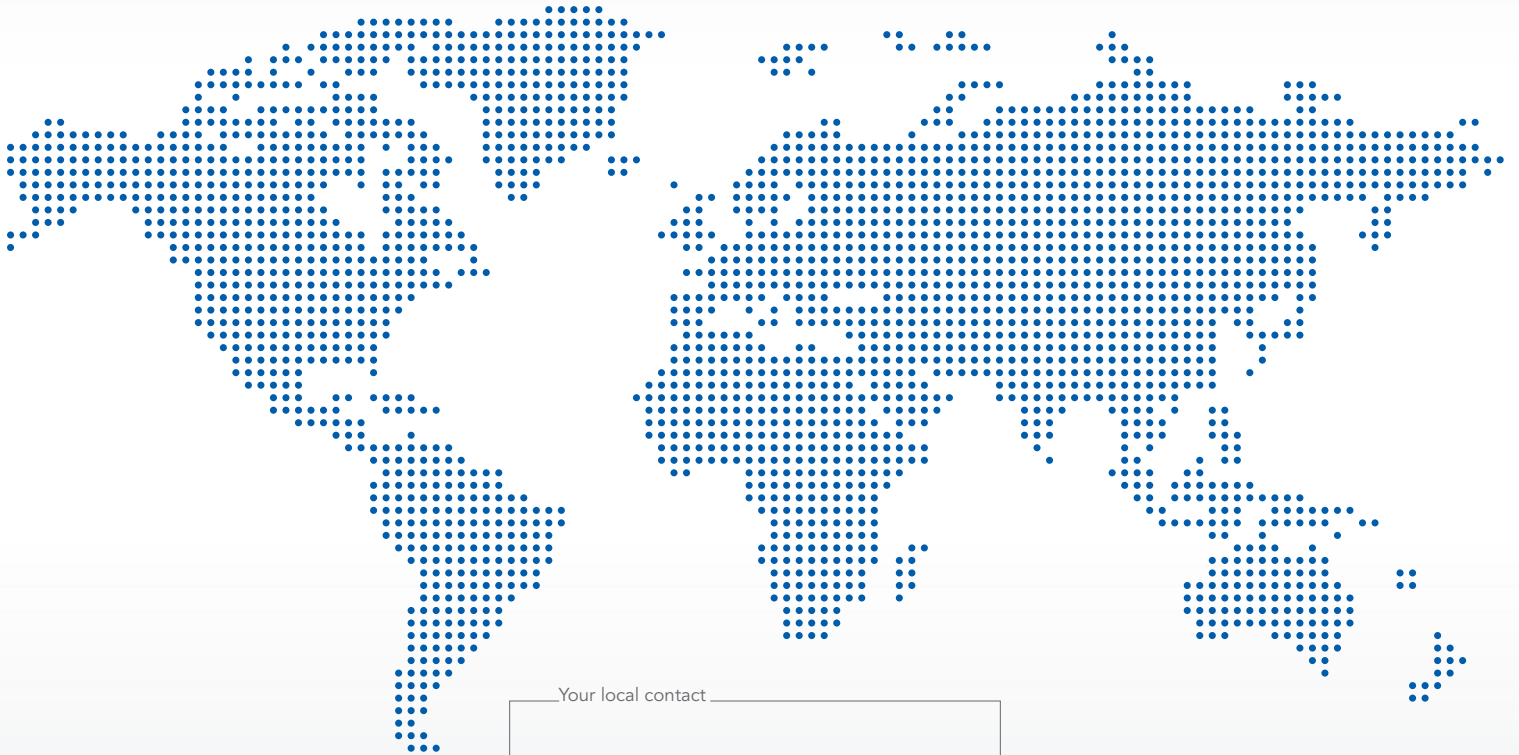
D sub, D38999, microComp®



"SpAcified" solutions



Reliable People, Reliable Solutions



Your local contact



Our contribution to environmental protection:
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Advancement of sustainable wood cultivation. www.pefc.org



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