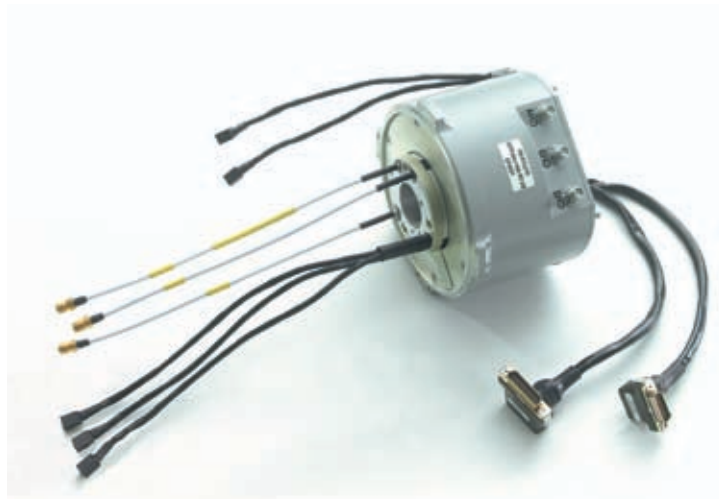

CUSTOM MICRO-D SOLUTIONS

CUSTOM DESIGN CONNECTORS

- Custom design connectors 206
- Materials & finishes 207
- 69 and 74 way Micro-D connectors 208
- Surface mount connectors 210
- Custom designed shells and hardware 211
- EMI & panel mount connectors 212
- Filtered Micro-D connectors 214
- Termination with flex circuits 226
- Waterproof & hermetic connectors 227
- High-density connectors 230
- Non magnetic Micro-D interconnect solutions 240

FROM CUSTOM DESIGN ASSEMBLIES TO MINI-SYSTEMS

- From assemblies to mini systems 242
- Our harnessing capabilities 243
- Technical solutions for assemblies 244
- Overmoulding expertise 245
- SILFORM® cables & assemblies 247
- Mini-systems : complete solutions 248



CUSTOM DESIGN CONNECTORS

In addition to the standard range of Micro-D connectors and assemblies, AXON' can develop custom designed solutions, all based on Micro-D twist-pin contact technology. AXON' is the sole manufacturer in Europe to have fully integrated in-house the design and the manufacture of the Micro-D system, including :

- Twist pins, shells, inserts and interfacial seals.
- Custom designed conductors, wires and cables.
- Complex assembly processes including optimised EMC shielding, branch braiding and overmoulding.

This high level of vertical integration enables AXON' to offer complete solutions which meet the demanding requirements of the aeronautics, space, military, industrial and off-shore markets.

▶ Common applications

▶ MIL-AERO

- Missiles and counter measures.
- Electro-optics.
- Navigation systems.
- Avionics equipment.
- Radar systems.
- Twist capsules.
- Shoulder launched weapon systems.
- Advanced soldier technology systems.
- Military GPS systems.

▶ NON MILITARY

- Down-hole drilling tools.
- Automotive test equipment.
- Medical devices.
- Ruggedised computers.
- Research centres.

▶ SPACE

- Satellite electronics.
- Space station and planetary explorer applications.

MATERIALS & FINISHES

AXON' can offer micro-D solutions with standard and special shell materials and finishes. The table below illustrates some of the more common options, however other materials and finishes may be possible on request :



▲ SALT SPRAY TEST EQUIPMENT

MATERIAL	IN ACCORDANCE WITH	DENSITY (g/cm ³)	FINISH	SALT SPRAY RESISTANCE (IN ACCORDANCE WITH EIA-364-26)	TEMPERATURE RANGE	MISCELLANEOUS
ALUMINIUM 6061	SAE AMS-QQ-A-250/11	2.7	<u>STANDARD MIL-DTL-83513 FINISHES</u>			
			- CADMIUM WITH YELLOW CHROMATE OVER ELECTROLESS NICKEL	96 HOURS	150°C	MILITARY APPLICATIONS
			- ELECTROLESS NICKEL	48 HOURS	200°C	MOST COMMON PLATING
			<u>SPECIAL FINISHES</u>			
			- CADMIUM WITH YELLOW CHROMATE OVER ELECTROLESS NICKEL	500 HOURS	150°C	MILITARY APPLICATIONS
			- HEAVY ELECTROLESS NICKEL	500 HOURS	200°C	MILITARY & SPACE APPLICATIONS
			- BLACK ANODISATION (IN ACCORDANCE WITH MIL-A-8625 TYPE II CLASS 2)	48 HOURS	150°C	NON-REFLECTIVE / POOR CONDUCTIVITY
- CHEMICAL FILM IN ACCORDANCE WITH MIL-C-5541 CLASS 3	48 HOURS	150°C	NON MAGNETIC APPLICATIONS			
- GOLD PLATING IN ACCORDANCE WITH ASTM-B-488 OVER ELECTROLESS NICKEL	48 HOURS	150°C	SPACE GRADE APPLICATIONS			
STAINLESS STEEL SERIES 300	-	7.8	PASSIVATION IN ACCORDANCE WITH SAE AMS-27000	1000 HOURS	200°C	EXCELLENT CORROSION RESISTANCE
TITANIUM	-	4.5	NONE	500 HOURS	200°C	ALL ROUND PERFORMANCE WEIGHT, CORROSION, EMC
KOVAR (Fe/Ni/Co ALLOY)	-	8.4	ELECTROLYTIC NICKEL	48 HOURS	200°C	HERMETIC APPLICATIONS

EMI & PANEL MOUNT CONNECTORS

EMI protection is a key issue for all electronics devices. Since the mid eighties AXON' has had a dedicated team of engineers who specialise in this field. The AXON' EMI Team has developed simulation software to predict the transfer impedance (or shield efficiency) of a connector, a cable or a complete cable assembly during the design phase before any manufacturing commences.

Product tests in AXON's stirred mode chamber and transfer impedance test bench validate the simulated results. Simulation is an excellent tool to optimise a design in order to provide the best compromise between performance, weight and cost. Such simulation has proven over the years that a good component is not enough to ensure good EMI performance. In addition, it is essential to ensure the right combination and compatibility between connector, cable and the shield termination to the backshell. The AXON' Micro-D backshells are specifically designed to perfectly fit the connector and prevent EMI leakage. Many other micro-D backshells are simply maintained against the connector by the hardware, but these solutions do not offer optimised EMI performance.

On request, the flange of a panel mount connector can incorporate a groove which enables an EMI o-ring or gasket to be fitted. In this case the flanges are wider than for normal connectors.



▲ SILVER PLATED FLANGE MICRO-D WITH EMI O-RING AND 360° SCREEN TERMINATION TO EMI BACKSHELL



▲ CUSTOM ANGLED EMI BACKSHELL

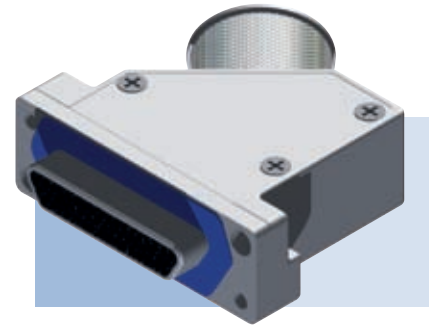


▲ LARGE FLANGE MICRO-D PIGTAILS WITH EMI GASKET GROOVES (51 WAY ON THE LEFT HAND SIDE, 25 WAY ON THE RIGHT HAND SIDE)

▶ EMI SOLUTIONS

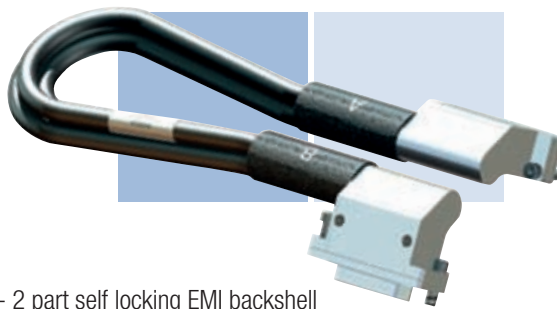
AXON' has drawn on long experience in the fields of RF and EMI protection to design and adapt the Micro-D connector to meet the most challenging of EMI environments. EMI customisation of the standard micro system can include :

- EMI gaskets or o-rings
- Special backshells
- Special connector shell designs
- Special finishes
- Optimised shield termination to the backshell.



▲ 2 PART SELF-LOCKING 45° EMI BACKSHELL WITH LARGE FLANGE MICRO-D CONNECTOR

▶ HIGH PERFORMANCE EMI HARNESS



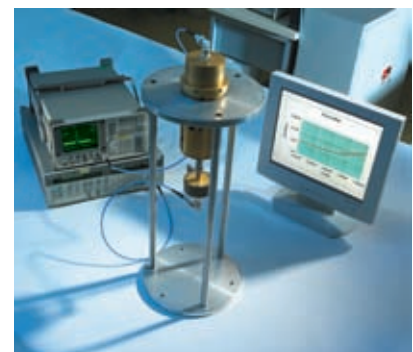
- 2 part self locking EMI backshell
- optimised shielding
- 360° screen termination
- EMI gasket
- special technical solutions for better EMI protection



▲ STIRRED MODE CHAMBER



▲ EMI BACKSHELL ON ITS OWN, AND FITTED TO A MICRO-D WITH SHIELD TERMINATION TO CABLE AND OVERALL PROTECTION



▲ MEASUREMENT OF TRANSFER IMPEDANCE