

## 10 Gb/s MICRO-D/ETHERNET LINK



# High speed 10 Gb/s Micro-D Ethernet link for severe environments

**80% connector weight and space saving** with improved performance compared to RJ45 connector integrated into a MIL-DTL-38999 body.



AXOFAST® : AXON' MICRO-D CONNECTOR



RJ 45 INTO A MIL-DTL-38999 CONNECTOR

### General characteristics

- › Micro-D connector specially designed by AXON' for 10 GBASE-T applications, to avoid connector crosstalk and reflection,
- › Excellent EMC performance on the complete assembly with 360° shield termination,
- › 100% tested assembly.

### Applications

- › Any on board, milaero applications where reliability and weight saving are the most important.

[www.axon-cable.com](http://www.axon-cable.com)  
[www.microd-connectors.com](http://www.microd-connectors.com)

 **axon'**  
CABLE & INTERCONNECT

# Micro-D 10 Gb/s / Ethernet

## Concept

This new assembly incorporates AXON' nickel plated aluminium Micro-D connectors according to the MIL-DTL-83513 standard especially designed to meet full 360° EMC and mechanical protection : High level of shock, vibration and mechanical impact protection.

The complete system consists of:

- Ethernet Cat.6a 10 gigabits 4 twisted pair cable, using AXON' unique A-PAIR® technology,
- 15 way nickel plated aluminium Micro-D connector, 31 ways for a double assembly (8 pairs),
- RJ45/Micro-D adaptor assembly.

### 1 - Shielded pairs

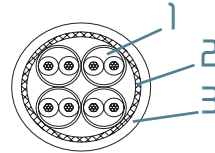
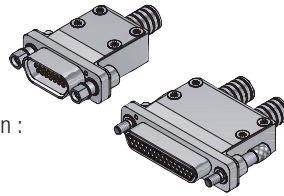
- Conductor : AWG 2707 silver plated copper
- Insulation : a-PTFE®

- Shielding : Mylar / Alu tape

### 2 - Braid

- Conductor : silver plated copper

3 - Jacket : FEP, PU or OHAL

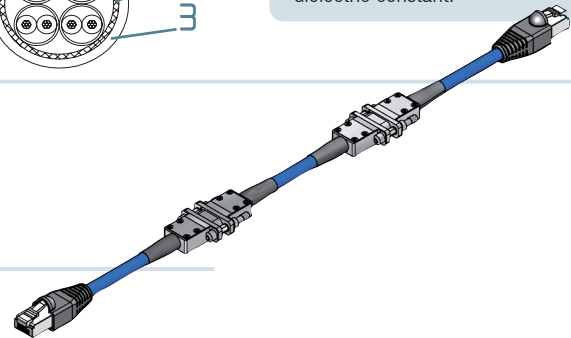


### The A-PTFE® structure

AXON's unique A-PAIR® extrusion technology combines the excellent dielectric properties of PTFE with an alveolar structure. PTFE is a high performance insulating material known for its resistance to high temperatures (-200°C to +260°C); its hot and cold temperature stability, water and UV light resistance and its low dielectric constant.

## Assembly construction

- Maintain signal integrity,
  - Possibility of double link on the same connector.
- For any other length, please contact us.



## Main characteristics

Impedance (ohms)	100 +/- 5
Capacitance (pF/m)	44
Capacitance unbalance (pF/km)	< 1600
Insulation resistance (Mohms)	> 5000
Attenuation (dB/100m)	
- 10 MHz	9.1
- 50 MHz	21
- 100 MHz	30
- 250 MHz	50
- 500 MHz	74.1
Rated temperature (°C)	-55 / +150
Min. bending radius static application (mm)	60
Min. bending radius dynamic application (mm)	90

NEXT : Near End Crosstalk (dB)	
- 10 MHz	> 60.3
- 50 MHz	> 49.8
- 100 MHz	> 45.3
- 250 MHz	> 39.3
- 500 MHz	> 34.8

Return Loss (dB)	
- 10 MHz	> 25.0
- 50 MHz	> 21.6
- 100 MHz	> 19.0
- 250 MHz	> 15.6
- 500 MHz	> 13.0

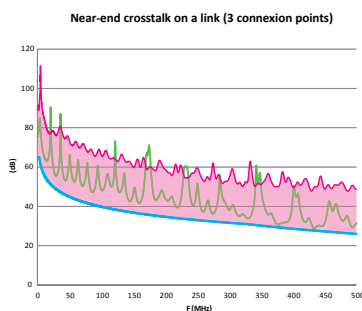
Weight (g/m) < 60

Please contact us for any information concerning environment tests.

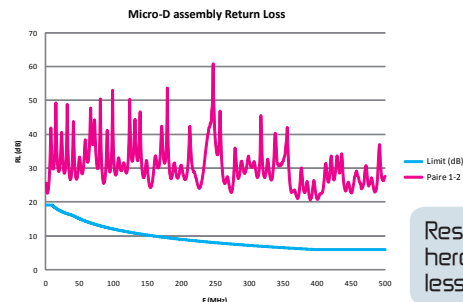
## Electrical performance

Comparison in terms of crosstalk between a solution with a RJ45 integrated into a MIL-DTL-38999 metal shell and the innovative AXON' solution using a Micro-D connector. The second graph shows Return Loss.

Electrical performance of the assembly in compliance with EIA/TIA 568 and ISO/IEC 11801 (55 m).



Improvement -17dB



Results given here are the less significant

## EMI protection

AXON' dedicated team of engineers in the field of EMI protection have developed simulation software to predict the Transfer Impedance (or shield efficiency) of a connector, a cable or a complete assembly during the design phase prior to any manufacturing commencing. Product tested in AXON's Stirred Mode Chamber and Transfer Impedance Test Bench validates the simulated performance.