

Interconnect solutions for Unmanned Aircraft



Axon' Cable designs interconnect solutions for the cabling of electronic systems in Unmanned Aerial Vehicles (UAV). The design of these cables, connectors and assemblies takes account of the operational constraints of these small aircraft: weight and space saving, miniaturization, security of radar and image transmission and the need for high data rates.

Weight and space saving

Weight saving translates directly into a greater distance covered by the UAV. This is a significant challenge for drones which have to carry out surveillance missions for several hours. Micro-D and Nano-D harnesses manufactured by Axon' Cable meet these twin challenges of miniaturization and weight saving. Despite their small size, this range of connectors, conforming to the MIL-DTL-83513 and MIL-DTL-32139 standards, is characterized by an excellent resistance to vibrations, thermal shock, fluids and electromagnetic interference. The already impressive EMI performance can be enhanced still further with the use of filtered versions of these connectors.

Axon' also offers lightweight cables to deliver even greater weight savings. For example, 30% weight per m can be saved using Axon's lightweight coaxial cables. Flexible wires for cabling in a restricted environment represent another technical solution developed by Axon'.

Secure and Reliable Transmission

Onboard links play an important role in information exchanges. They have to be reliable and secure. In order to meet these requirements, Axon' offers Micro-D Ethernet links. These assemblies reduce unwanted crosstalk and reflection whilst decreasing weight and space by up to 80%.

MIL-STD-1553B couplers, connectors and harnesses enable the system integrator to build a reliable data transmission network throughout the whole drone.

High flex microwave assemblies have been designed for dynamic applications including radar and surveillance systems. They withstand high levels of repetitive bending and can be used for frequencies up to 18 GHz. Their configuration protects them against EMI.

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In addition to complex harnesses, Axon' has developed the Axotwist™, a twist capsule system which can be integrated into electro-optical systems within the UAV. Silicone cables are placed between two metal rings which rotate with respect to one another. These systems can integrate signal, power, coaxial cables or controlled impedance pairs as required. Signal integrity is maintained throughout.

About Axon'

The AXON' group specialises in designing and manufacturing high tech conductors, electronic cables and interconnect solutions for markets such as consumer electronics, telecommunications, computer, automotive, military, medical, aeronautics and space. The headquarters of the company is situated in Montmirail in France (100 km east of Paris) and employs 1500 staff world-wide in 10 subsidiaries across Europe, America and Asia.

The group consolidated turnover amounts to around 79 million € (2009), 60% of which is achieved through export.

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