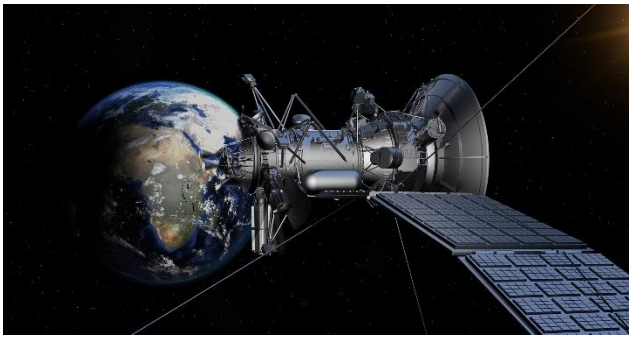
Application Note
Low Outgassing Cables for Satellite/Space Applications



Application:
Cables for Satellite & Space Applications

Kemo Cables:
Low noise and coaxial cables
Low outgassing requirements – met!!

Application:

The use of satellites within the communication, weather and defence industries as well as for space exploration has always been at the forefront of technical innovation. However there has been a huge expansion in the growth of satellite build and launch over the last few years and this is expected to continue for many years to come. We are also into the era of space tourism, so it's a fast-moving industry (excuse the pun!!)

Not many people will be aware that vibration testing is a critical part of satellite development, build and monitoring. The vibration levels endured by the satellite during launch are extreme and as such the equipment must be able to withstand this period to ensure full functionality once in orbit.

Satellites are built with many accelerometers and other sensors embedded within their structure as well as sometimes kilometres of cables to carry the signals back to the instrumentation. This presents an interesting application detail, as all materials used on a satellite must conform to strict 'low outgassing' requirements which means the materials used must not lose more than a certain percentage of their mass under high vacuum conditions.

Kemo cables can be supplied for space applications with only very minor changes from the standard assembly, almost all standard materials used in Kemo's range of low-noise cables already meet the strict low-outgassing requirements.

The only changes required are to replace the normal rubber strain relief boots applied to the connectors with a special low-outgassing heat shrink, this ensures the complete assembly meets the standard required. Cables can also be supplied with a range of other connectors, all of which are also suitable for satellite and vacuum applications.

Low noise cables for use with charge and IEPE accelerometers or other charge output sensors, uses a PFA jacket and has a PTFE dielectric, the TML (total mass loss) and the CVCM (Collected Volatile Condensable Material) figures are below:

	PTFE	PFA
TML	**00.06%**	**0.01%**
CVCM	**0.02%**	**0.00%**

Kemo's standard coaxial cables which can be used with any IEPE sensor also has extremely low figures and meets the requirements for all satellite and space applications.

	FEP
TML	**0.02%**
CVCM	**0.00%**

For more details and to discuss your cable requirements, please contact us sales@kemo.com

Kemo Limited
First Floor, 33 King Street, Thetford, Norfolk, IP24 2AW, United Kingdom
+44 (0)1474 705168
www.kemo.com **sales@kemo.com**