

Press release

Testing safely in a vacuum – with the right equipment

Kistler expands portfolio with low outgassing cables for space testing

Winterthur, May 2021

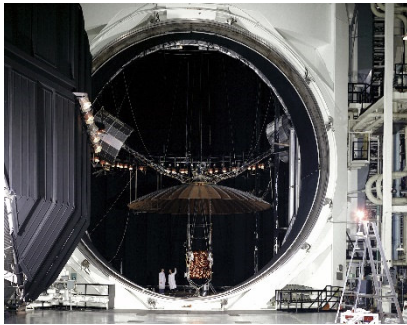
Kistler now offers low outgassing cables for their titanium housing piezoelectric accelerometers used for space testing. They are suitable for on-ground tests that take place under a vacuum and even allow engineers to leave the test equipment on board of the space craft or satellite during their mission.

The extreme conditions of outer space pose different challenges to equipment. Standard components can become a problem when used in space crafts and satellites. For example, standard cable materials may emit gases. The amount of freed gas increases in the artificial vacuum of environmental space tests on ground or in space itself. These gasses can potentially condensate on sensitive equipment such as camera lenses and might corrupt test results or even endanger the entire mission.

To meet space test demands, Kistler has now expanded its portfolio to incorporate a cable series with fluoropolymer jackets which meet low outgassing requirements. Additionally, a second cable series with silicone jackets are available for applications which require more cable flexibility as well as low outgassing requirements. Both cable types have been tested by an independent laboratory and delivered very positive results: the TML (total mass loss) proved to be less than one percent, while the CVCM (collected volatile condensable mass material) ranges below 0.1 percent. The cables therefore comply with NASA and ESA requirements and are suited for high vacuum space environments.

Triaxial accelerometers from Kistler are used to measure forces in different test scenarios on space crafts and satellites. The heart of the sensor is an element that omits an electric impulse when force is applied, the so-called piezoelectric effect. The electric load is proportional to the external impact. Due to the element's stiffness, piezoelectric sensors prove to be ideal for demanding measurements with dynamic forces such as testing of space payloads or shock and vibration tests. Accelerometers that are used in an artificial vacuum on ground or that will remain on board during the mission come with a non-outgassing hermetically sealed titanium housing. The new cables complement the titanium housing sensors and are delivered in customer specified lengths.

Image material (please name the Kistler group as picture source)



On-ground environmental space tests demand equipment to withstand artificial vacuums without emitting potentially problematic gasses.



Low outgassing cables for triaxial accelerometers from Kistler come with a fluoropolymer or a more flexible silicone jacket (Kistler Cable Types 1734ALK04SP, 1756CLK04SP, and 1784BLK03SP).



The triaxial voltage miniature accelerometer series with hermetically sealed titanium housing from Kistler is ideally suited for use with the new low outgassing cables.

Media contact

Martin Marinak
Marketing Manager for BU Test & Measurement and E-Business
Tel.: +41 52 2241 974
Email: martin.marinak@kistler.com

About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this owner-managed Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,050 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2020, it posted sales of CHF 361 million. About 9% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.