A Two-Axis Direct Fluid Shear Stress Sensors

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DESCRIPTION

This technology is a multi-axis direct shear stress sensor for aerodynamic applications. The stress sensor has a shear force collecting plate that is coplanar with an adjacent associated aerodynamic surface exposed to fluid flow and a silicon-made multi-axis torsional sensor for measuring torsional strain. A gimbal structure has an arm that interconnects the plate and the torsional sensor, so as to facilitate a pivotal movement of the plate in response to fluid flow. The pivotal movement of the plate causes deformation of the torsional sensor.

FEATURES AND BENEFITS

o   The sensor enables a large moment and stress level to be generated from relatively small shear stress acting on the shear force collecting plate. Thus, high spatial and stress resolution capability is enabled.
o   The sensor facilitates direct detection of wall shear stress independent of fluid flow conditions, with its active components isolated from the fluid environment.

APPLICATIONS

o   Hydrodynamics
o   Turbo Machinery
o   Polymer Processing
o   Fluid Flow Applications

FOR MORE INFORMATION

If you are interested in more information or want to pursue transfer of this technology, GSC-15431-1, please contact:

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