

## High-Pressure and Seawater Resistant LVDTs Enhance Performance of Sub-sea Measurement Systems

By Macro Sensors

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*Macro Sensors design high-pressure and seawater resistant LVDTs for incorporation into sub-sea measurement systems to monitor the structural integrity of offshore platforms and pipelines.*

LVDTs are designed for use in either pressure-balanced, oil-filled containers or directly in seawater. Some typical applications for LVDT-based sub-sea measurement systems include monitoring structural movement for a long-term FEA (Finite Element Analysis) of pipelines, derricks, moorings and other critical high stress members on offshore oil platforms.

When measurements must be obtained in seawater depths down to 7500 ft., with external pressure of approximately 3800psi and minimum service life requirements of 20 years, Macro Sensors designs its High-Pressure and Seawater Resistant LVDTs from 316SS and Inconel 625 for pressure and corrosion resistance. These materials enhance the already high-reliability of a LVDT assembly, ensuring it will continue to operate for minimum life requirements, even if the device is fully exposed to seawater.

Macro Sensors' LVDTs also resolve the problem of getting a signal back to the surface, even in great water depths. To minimize the number of pressure-sealed connections and I/Os, a 4-20mA two-wire, loop-powered I/O can be utilized. A 4-20mA I/O also minimizes any noise over long transmission lines. Offsets can be easily made in the data acquisition system on the platform above. Another major advantage of using LVDTs for sub-sea applications is its extraordinary repeatability, regardless of offsets due to pressure and/or temperature. For more information on High Pressure and Chemically Resistant LVDTs and other custom LVDT units from Macro Sensors, please contact the factory at sales@macrosensors.com.

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### About Macro Sensors

Macro Sensors' extensive line of LVDT-based linear and rotary sensors are used for linear position measurement and feedback in a variety of industrial applications including factory automation, motion control systems, metal fabricating, automotive assembly as well as power plants, gas/steam turbines. Incorporated in 1994, the Company offers more than 200 years of cumulative design and manufacturing experience by its key staff in serving its OEM and end-user international customer base. On June 1, 2005, Macro Sensors was acquired by AST, manufacturer of state-of-the-art Micro-Electro-Mechanical-Structures (MEMS) based pressure sensors, transducers, and transmitters. Common applications of AST sensor products are in industrial OEM, hydraulic systems, fuel cells, medical gases, HVAC/R, refrigeration, oil & gas exploration/production, and off-road vehicles. For more information on AST products and technology, visit the AST website at [www.astensors.com](http://www.astensors.com).

Category	Electronics
Tags	lvdts, linear position sensors, seawater resistant lvdts, pipelines, platforms
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