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PLYMOUTH, MICHIGAN ---- Optrand will introduce its new **Pressure Measuring Glow Plug, the PSIGlow™**, at the Society of Automotive Engineers (SAE) International Congress and Exhibition at Cobo Center in Detroit, April 16 through April 19, 2007.

This newest generation device integrates Optrand's **1.7mm-diameter fiber optic-based pressure sensor** with a **fully functional ceramic heater-based glow plug** allowing cylinder pressure monitoring of diesel engines without head modification or loss of glow plug functionality.

The sensor is welded into the high current electrode of the glow plug heater and the sensing diaphragm is exposed to combustion gasses through a radial orifice in the ceramic heater and a short connecting passage filled with an Inconel wire mesh. Any combustion deposits that may accumulate on the wire mesh are burned out during glow plug activation. The sensor head construction and signal conditioner's circuitry compensate for the effect of varying temperature, due to both engine load changes as well as glow plug heating, resulting in **the accuracy of +/-1.5%** of a water cooled reference transducer, under all engine operating conditions. Besides pressure, the PSIGlow offers the **sensor and glow plug diagnostics output**.

Two types of ceramic heaters are presently available, one with the maximum diameter of 4.0mm and the other with 4.4mm maximum diameter. Heaters rated for 7V and 11V excitation can be used. The maximum **glow plug tip temperature is typically 1250°C** reached in less than 3 seconds. There are no adverse effects of glow plug length or diameter on pressure detection accuracy or device durability.

The **device targets cold start studies and heat release analysis** including calculation of Indicated Mean Effective Pressure, Mass Fraction Burned, Start of Combustion, Maximum Pressure Rise, Peak Pressure, and similar. Other applications include advanced **engine controls, monitoring, and diagnostics as well as virtual sensing** of Mass Air Flow and/or combustion gasses such as NOx.

Optrand, Inc. is a Plymouth, Michigan based developer and manufacturer of fiber optic sensors targeting automotive and industrial applications.

