Kaman's KD2306 signal conditioning electronics for precision static and dynamic position measurements supports a wide selection of standard, moderate and high-temperature sensors.

New Position/Displacement Sensor from Kaman

Kaman Aerospace Corp.'s Measurement & Memory Division, Colorado Springs, Colorado, U.S.A., offers its KD-2306 measuring system for multipurpose, noncontact position and displacement sensing of industrial gas turbine blades. The KD-2306 is an upgrade of the KD-2300, a multipurpose variable impedance transducer (VIT), which has been Kaman's single channel inductive measuring system for around 30 years.

"The KD-2306 was introduced about a year ago," said Will Meenan, regional sales manager. "It was initially developed for the European market; however, with its performance enhancements and variety of options, including extended sensor cable lengths, extended range calibration, temperature compensation calibration and sensor customization to fit unique applications, it also has found wide acceptance in the U.S. and the rest of the world."

Agilis Measurement Systems Inc., Palm Beach Gardens, Florida, U.S.A., builds data acquisition analysis systems for high-cycle fatigue blade vibration in turbomachinery rotating components. The company recently placed Kaman sensing systems on a MAN Turbo centrifugal compressor being used for gas injection at an Indonesian copper smelting facility. Agilis has also completed spin pit testing at Test Devices Inc. of first-stage compressor blades in a power turbine instrumented with KD2306 measuring systems.

"We chose Kaman's inductive sensors over optical sensors because of the harsh environment," said Ron Figoras, general manager of Agilis. "Another advantage is that eddy current sensors don't need purge air, while the optical sensors do.

"Agilis performs health monitoring on a long-term basis," said Figoras. "The Kaman sensors were installed on the Indonesian compressor about two months ago and we will take the probes out in 2010. We don't need to be there monitoring the equipment, as the data is being fed remotely to the U.S through Agilis hardware. It is transmitted back via the Internet."

The RoHS-compliant KD2306, a noncontact linear displacement measuring instrument based on proven balanced bridge eddy current technology, is simple to use. It makes high-precision static and dynamic measurements and supports ambient, moderate temperature, and cryogenic-rated sensors, according to Kaman. The CE-marked system with DIN rail mount is ideal for integration into OEM equipment and industrial control applications.

Able to sense both ferrous and nonferrous metal targets, the KD-2306 includes electronics, sensor and interconnecting cable. Standard sensing ranges are from 0.5 mm to 61 mm, with 0.01% FS resolution or better, with nonlinearity as little as 0.25% FS. Kaman offers over 30 sensor models including single and dual coil, shielded and unshielded designs. Terminal I/O connections connect 15 to 30 Vd.c. input power, optional zero to 5 Vd.c., zero to 10 Vd.c., ±5 Vd.c., 4 to 20 mA output, and synchronization capability for multiple channel operation. The system offers both coarse and fine calibration potentiometers, and external user synchronization.

While relatively new to the land-based gas turbine market, Kaman has been serving a diverse collection of industries for more than 40 years. From semiconductor manufacturing equipment to metal forming, their measuring systems have been integrated into OEM products and custom applications. The company specializes in providing unique solutions for linear displacement measurement needs, in anything from automotive engine test stands to rocket engines.

Examples of Kaman's moderate (left) and high-temperature sensors (right).