High Temperature Resistance Make Linear Position Sensors Ideal for Valve Positioning Applications in Power Plants

Built for extraordinary reliability and resistance to high temperatures, HSTAR 750 Series Hermetically Sealed Position Sensors from Macro Sensors offer a highly accurate and long life solution for the position measurement of steam control valves in power generation plants. Constructed of stainless steel, these ¾" (19 mm) diameter AC-operated position sensors operate in environments with high temperatures (400°F).

Installed within the harsh environs of a steam plant, the HSTAR 750 Position Sensors can provide highly accurate position feedback of different control valves, providing output to remotely located electronics and/or control systems. For example, a typical two-stage steam turbine can contain a number of control valves - governor valve, throttle valve, interceptor valve, re-heat stop valve - all of which are operated by hydraulic actuators. Because the governor and throttle valves are modulating valves whose steam flow is of paramount importance to the efficiency of the turbine, it is especially critical to know their positions. It is also important to know if the interceptor and stop valves are either fully opened or closed. The HSTAR 750 Sensors can provide the necessary position output to signal an operator if something is not working properly. The cost to the plant operator of improper operation and inefficiency due to wrong valve settings can result in as much as several million dollars a year.

Along with its resistance to high temperatures, the HSTAR 750 units feature high resolution, excellent repeatability and low hysteresis as well as the highest sensitivity consistent with good linearity. This means operators don't need to change out units frequently and can rely on output to maintain optimum plant operations.

Electrical termination of the HSTAR 750 Series also is made through a sealed radial connector located near one end. The radial connector results in a through-bore design that permits access to either or both ends of the unit's core for better mechanical support and core guidance, and easier cleanout in dusty or dirty locations. As the radial connector has a shorter installed length, the length of the HSTAR 750 Series sensors are at least 2" shorter than comparable units with an axially mounted connector for easier installation in tight spaces.

Available in ranges of ±0.050 inch (±1.25 mm) to ±10.0 inches (±250 mm), HSTAR 750 sensors are offered in several standard options including metric threaded cores, smaller diameters and low mass cores.