

Application of Rotary sensor in Control Valve

Modern processing plants utilize a vast network of control loops to produce an end product. These control loops are designed to keep a process variable within a required operating range to ensure a quality end product is produced. To reduce the effect of these load disturbances, sensors and transmitters collect information about the process variable. A controller processes this information and decides what must be done to get the process variable back to where it should be after a load disturbance occurs. When all the measuring, comparing, and calculating are done, some type of final control element must implement the strategy selected by the controller.

Working Principle:

Control valves regulate the flow of a liquid or gas by opening or closing internal passages. They form part of a control loop used to control a process. The control valves respond to instructions from the controller and adjust the internal openings accordingly. A control valve consists of three key components – the valve, the actuator and the controller. The actuator is used to move the valve stem. They are usually electrically driven. The controller calculates the size of the change to the valve internal passage to bring the flow to the desired rate.

Valves need a very precise measurement of the flow rate. Due to the large number of valves used in waterworks, **rotary encoders are used as they can count revolutions even during a power shutdown. Rotary encoders provide accurate rotation, tilt and length measurement.** This system acts as feedback control system as the output of the rotary sensor is again provided as input to the control valve.

