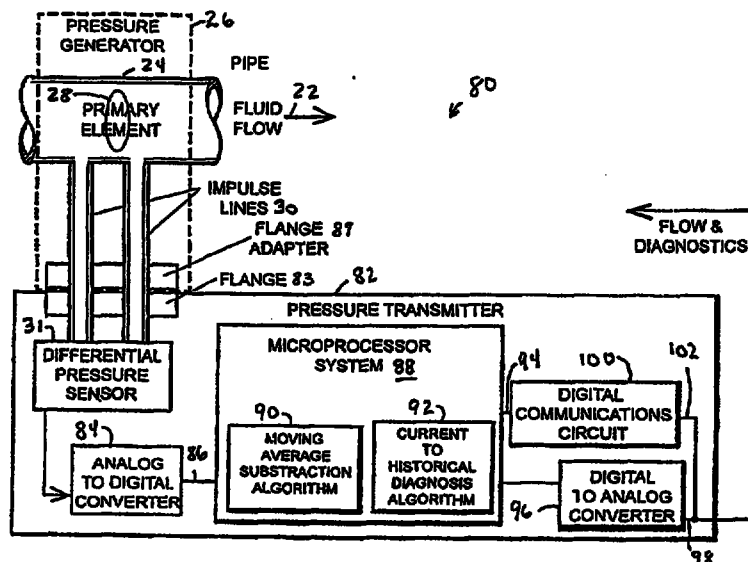




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(54) Title: FLOW MEASUREMENT WITH DIAGNOSTICS



(57) Abstract

A fluid flow meter (82) diagnoses the condition of its primary element (28) or impulse lines (30) connecting to a differential pressure sensor (31). A difference circuit (90) coupled to the differential pressure sensor (31) has a difference output representing the sensed differential pressure minus a moving average. A calculate circuit (92) receives the difference output and calculates a trained output of historical data obtained during an initial training time. The calculate circuit (92) also calculates a monitor output of current data obtained during monitoring or normal operation of the fluid flow meter (82). A diagnostic circuit receives the trained output and the monitor output and generates a diagnostic output indicating a current condition of the primary element (28) and impulse lines (30).