



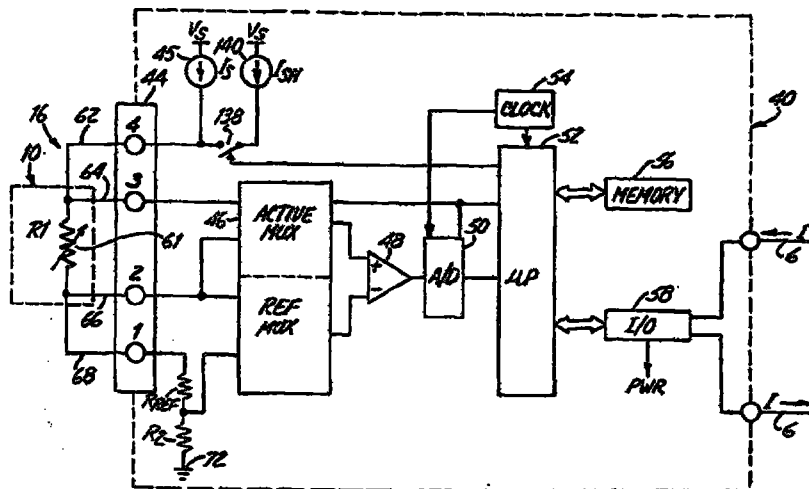
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(54) Title: AUTO CORRECTING TEMPERATURE TRANSMITTER WITH RESISTANCE BASED SENSOR



(57) Abstract

A transmitter (40) in a process control system (2) includes a resistance-based sensor (10) sensing a process variable and providing a sensor output. Self heating circuitry coupled to the sensor (10) provides a self heating signal related to the sensor (10). Analog-to-digital conversion circuitry (50) coupled to the sensor output provides a digitized sensor output, and transmitter output diagnostic correction circuitry (52) provides an auto corrected output as a function of the self heating signal output or in another embodiment, the transmitter (40) outputs a residual life estimate of the sensor (10) as a function of the self heating index.