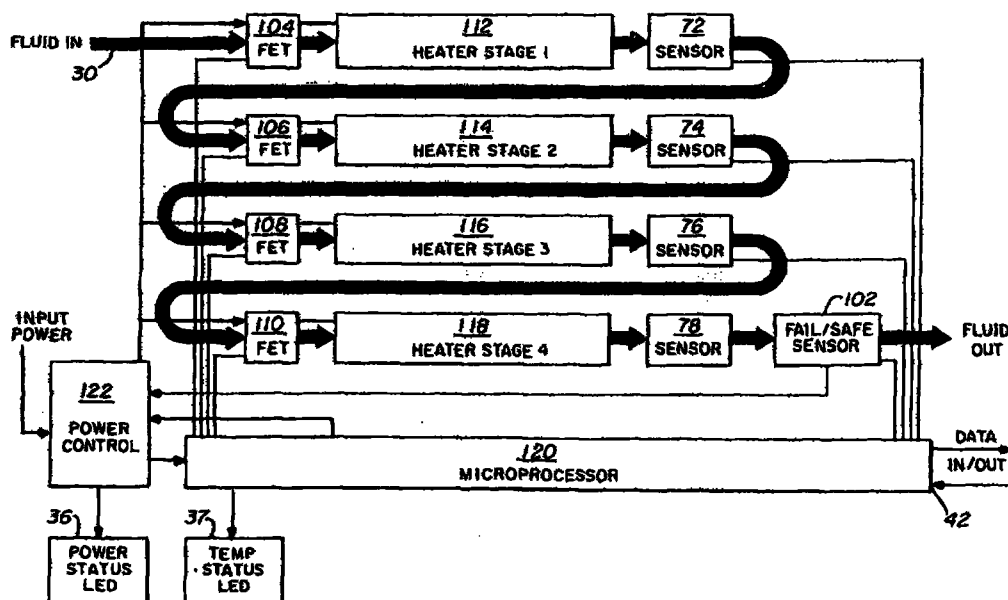




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(54) Title: PORTABLE I.V. FLUID WARMING SYSTEM



(57) Abstract

This invention is a portable intravenous fluid warming system (20) where temperature monitoring, and control is accomplished utilizing four monolithic IC thermo-sensors (72, 74, 76, 78). The sensors (72, 74, 76, 78) operate in a serial multistage to reduce the dynamic range of the final heater stage, thus ensuring a more accurate, and consistent output temperature. Power FETs (104, 106, 108, 110) provide heater drive current from an unregulated DC input source (122). The sensor (72, 74, 76, 78) is coupled to a microprocessor (120) that continuously determines the temperature, adjusting power to the FETs (104, 106, 108, 110) as necessary to hold a desired temperature. Interfacing (40) is provided to an optional external digital readout unit. An in-line thermo-circuit breaker (102) will provide an independent over-temperature shutdown fail-safe.