

Electronic Thermostat Control Unit and its use in Multipoint Temperature Controller for Refrigeration and Heating Systems

ABSTRACT

This invention relates to an electronic digital thermostat consisting of a single p-n junction as the temperature sensing element connected to an A-D converter, a sensitivity and Offset Correction circuit, digital comparators, digital noise filters, a control latch, an output drive and protection circuit and a solid-state switch to produce the desired output, with user input in either analogue form using a potentiometer or digital form using a switch, with calibration and control data stored in non-volatile memory, and a display unit for displaying sensed or user-set temperature.

This invention further relates to the application of the said electronic digital thermostat in a multipoint temperature controller for Refrigeration and Heating systems, using a plurality of the said electronic thermostat control units with a logic circuit, Central Control Unit, System Timers, and a Starting Relay circuit to provide application-specific functions.

The implementation is also shown in the form of an Application Specific Integrated Circuit (ASIC) to provide reduced size and cost

Figure 1