INTISARI

Sistem Pengendali Suhu Air Berbasis Rangkaian Digital ini merupakan suatu usaha memperoleh suhu air dengan mengaplikasikan rangkaian digital. Rangkaian elektronik dari sistem Pengendali Suhu Air Berbasis Rangkaian Digital ini terdiri dari beberapa bagian utama yaitu : (1) sensor suhu, (2) rangkaian *set point*, (3) pengondisi sinyal, (4) pengubah tegangan analog ke digital, (5) komparator, (6) kontroler, (7) penggerak, (8) plan/pemanas, dan (9) rangkaian penampil.

Pada penerapan pengendalian ini suhu akan dibatasi dengan beberapa nilai *set point* yaitu *: set point* I: 40°C, *set point* II: 70°C, dan *set point* III: 90°C. Jadi pada saat *set point* I: 40°C ditekan, maka plan/pemanas akan menyala menghasilkan suhu sebesar 40°C dan suhu tersebut akan dipertahankan sesuai dengan perbandingan nilai biner antara *set point* dengan sensor sama dimana plan/pemanas akan mati, dan suhu perlahan-lahan akan turun sehingga perbandingan nilai biner menjadi berbeda maka plan/pemanas akan hidup sampai nilai biner antara *set point* dengan sensor sama .

Pada saat sistem dilakukan pengujian, dapat diketahui bahwa perangkat elektronis yang dibuat sudah dapat digunakan sebagai piranti pengendali untuk mengatur batasan suhu air yang diinginkan.

Kata kunci : suhu air, rangkaian digital, pengendali

Abstract

This Digital Connecting Structure-based Water Temperature Controlling System is an excretion to get the determined water temperature by applying the digital connecting structure. The electronic circuit of Digital Connecting Structure-based Water Temperature Controlling System is divided into several main parts: (1) the temperature sensor, (2) set point connecting structure, (3) signal conditioner, (4) analog to digital conversion, (5) comparator, (6) controller, (7) driver, (8) heater, and (9) projector circuit.

In applying this controlling system, the temperature is limited with several set point: set point I: 40°C, set point II: 70°C, and set point III: 90°C. Therfore, whwnever set point I: 40°C is pressed, it will turn on the heater cusing 40°C temperature and the temperature will be kept appropriately in accordance to the comparison between binary value and set point using the same sensor in which the heater is turned off and the temperature will slowly decrease, so that the comparison of the binary value will be different. Thus, the heater will be turned on until the binary value of the set point and the sensor reach the same value.

When the system was tested, can be known that periperal electronis which made have earned to be used as controller apparatus to arrange wanted water temperature constrain

Keywords: water temperature, digital connecting system, controller.