

Akuisisi data temperatur dan tekanan udara berbasis mikrokontroler H8/3069F

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Abstrak

Rancangan alat akuisisi data temperatur dan tekanan udara berbasis mikrokontroler H8/3069F menggunakan sensor temperatur digital DS18B20, sensor tekanan udara analog MPX4155A. Sistem ini juga dilengkapi informasi waktu, posisi dan ketinggian yang diperoleh dari GPS Garmin 18 LVC. Perangkat lunak yang bekerja pada mikrokontroler dibuat menggunakan bahasa C yang dikategorikan sebagai bahasa mid-level yang mudah diimplementasikan pada mikrokontroler. Adapun komunikasi sensor DS18B20, sensor MPX4155A dan GPS ke mikrokontroler masing-masing menggunakan 1-wire, ADC, dan RS232. Selanjutnya, hasil akuisisi ditampilkan dalam bentuk Graphical User Interface (GUI) yang dibuat dengan bahasa pemrograman Python dan database berbasis MySQL.

Instrument design of acquisition temperature and air pressure based on microcontroller H8/3069F using digital temperature sensor DS18B20, analog air pressure sensor MPX4155A. The system equipped with time, position, and altitude information obtained from GPS Garmin 18 LVC. The software works on microcontroller made by using C language which is categorized as middlelevel language and easy to implement on a microcontroller. Interfacing of DS18B20 sensor, MPX4155A sensor and GPS to microcontroller respectively using 1wire, ADC, and RS232. Moreover, the result of acquisition is shown in the form of graphical user interface (GUI) created with Python programming language and database based on MySQL.

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