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FIRE ALARM SYSTEM CONTROLLED BY USING COMPUTER

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Fire alarm systems having hard wire layout and normally opened warning devices like heat detector and smoke detector in general specifications, have a good view in low price, but have a bad view in 1. low efficiency to warn and to communicate to human2. difficult of maintenance3. hard expansion and transformation of working4. no record and no database to develop in the future Therefore, this thesis proposes the design and construction of fire alarm system which can solve those problems. This fire alarm system is controlled by 80C31 microcontroller and is indicated situations of the system composed of 4 modes of working state, regular working mode, short circuit mode, open circuit of wiring signal mode, and fire mode by computer. Graphic output states are displayed on personal computer, PC, by using software delphi, interfacing with microcontroller. Input signal coming from the normally opened warning devices such as heat detector, smoke detector and master key is sent into a detectable instrument to separate the mode of working state. This detectable instrument uses the principle of comparing voltage level of op-amp. After that, output signal is despatched to 80C31 microcontroller for analysis. This microcontroller can transfer data and display the situation of detector in 6 zone. Thus, the calculated all output data is expended to PC. In case of fire mode, the data will be sent to PC and to bell simultaneously. Delay time of signal message can be changed directly and easily by PC. In addition, all information including mode of state, date and time are recorded to be database for further analysis. These raw data, thus, benefit for the development of fire alarm system to possess both more efficiency and more accuracy. Comparing this controller with another conventional controller in the same specifications, the controller is used and installed easier because of working with no specific fire alarm devices, as well function of working mode and retardation are changed more comfortable because of program computer. Moreover, total price of this fire alarm system unit is significantly cheaper.