Design an automatic temperature control system

Design

It also has a unique double feature designs, such as using 2 fans, 2 Light Emitting Diodes (LED) and 2 sensors. This is to ensure the cooling process operates more efficiently and effectively, especially for a large space application and In hot weather due to global warming. By applying the circuit, It offers a better life for human. It Is really practical for senior citizens to make their life simpler. The circuit is also suitable for disabled people who have difficulty to switch on the fan manually.

Lastly, the circuit can be manipulated by diversifying its function as a detector, where It can produce an alarm signal when emergency case occurs such as the house or premise Is on fire. Keywords: Automatic, Temperature, Fan, Pl. 1 org Electric fan is one of the most popular electrical appliances due to its cost effectiveness and low power consumption advantages [1]. It is a common circuit and widely used in many applications [2]. It is also one of the most sensible solutions to offer a comfortable and energy efficient.

In fact, the fan has been long used and still available in the market. Nowadays, the usage of fan is controlled manually by pressing on the switch button. This non-innovative feature makes it unable to turn on automatically according to temperature changes. So, an automatic temperature control system technology is applied for the switching purpose in this circuit. Due to its advantages, many researches focusing on automatic temperature control system application in different fields will gain the benefits.

For examples, an automatic temperature controller for enlivenment array hyperthermia systems [3], multi-loop automatic temperature control system design for fluid dynamics [4], automatic temperature control for transport

airplanes [5], design of automatic temperature control system on laser diode of erbium-doped fiber source [6], design of demonstrativeness-control circuit module in tunnel microwave heating system [7], development of automatic imperative control system in blast furnace [8], the automatic temperature system with Fuzzy self-adaptive Proportionality's-Derivative (PAID) control in semiconductor laser [9], the constant temperature automatic control system design of 36 base station without man' s guard [10], automatic body temperature control system for small animal studies using paper ID: 21081301 dual mode Proportional-Integral (P') control [1 1], automatic temperature and humidity control system using reconditioning in transformer substation [12] and so forth. There is also a case study of automatic temperature control yester on diagnosable discrete event system design [13]. This paper proposes an invention of Smart Electric Fan for various applications. It has an automation operation by using a microelectronic. It uses a unique design such as 2 fans, 2 Leeds and 2 temperature sensors. This is to enhance its functionality to become more efficient and effective for large space and hot weather condition. The circuit provides a comfort for humans life, especially for senior citizens.

It really helps to solve the problem of handicapped person when to switch on the fan. Finally, the circuit can also detect when fire occurs by . Methodology The circuit presents the design, construction, development and control of automatic switching electric fan. The idea is based on the problem occurs in humans life nowadays by improving the existing technology. The Peripheral Interface Controller (PICK) based automatic fan system is applied to upgrade the functionality to embed automation feature. The electric fan will

automatically switch on according to the environmental temperature changes. The circuit is using a microelectronic to control the fan according to the temperature variation.

The system measures the temperature room the Integrated Circuit (C) ALMS, where it will control the fan according to the setting values in the programming. Volume 2 Issue 9, September 2013 wry. Sirs. Net The system indicates the temperature from the PACIFISTIC, and it will display it on the Liquid Crystal Display (LCD). The temperature then is compared with the setting value. If the room temperature goes beyond the preset temperature, then the fan will turn on. It also provides a security characteristic, where it detects an extremely high temperature, for example when the room is on fire, which the buzzer will instantly reduce an alarm sound to alert people of the danger. For the voltage regulator circuit as shown in Figure 1, the voltage range of power supply is between V and V.

Higher input voltage will produce greater heat on LAMELY voltage regulator. So, normally the ideal voltage is V. The LAMELY will regulate the given voltage to favor supplying to the PACIFISTIC and pull up the push button. The purpose of using diode is for circuit protection, in case the polarity of the power source connection is incorrect. Capacitor is used to stabilize the voltage input and output of the LAMELY. Red LED acts as a power indicator. LED from over current that will burn the LED. When the output is in logic 1, the LED will ON, and vice versa. Figure 3: The LED as an output for PICK circuit The circuit starts to function when the V Direct Current (DC) battery supply is turned on.

It is connected to the ICC regulator circuit to produce V stable voltage. Then, the ALMS sensor functions to measure the changes of temperature surrounds the area. All the operations are controlled by the PACIFISTIC to produce the output. The PICK is as a brain of the circuit. The LCD, fans and buzzer are the output where they re set with the pseudopodia of Pl. The LCD is used to measure and show the changes of temperature value. The fan starts to function when the switch is turned on. The high value of temperature causes both fan A and fan B to turn on automatically. Then, the buzzer will only show the emergency feature if the temperature reaches an unusual value.

The complete design of Smart Electric Fan circuit is shown in Figure 4. Figure 1: The voltage regulator circuit An input/output (1/0) pin is required for a push button, which as an input for PICK microelectronic. The connection of the push button to the l/ O pin is illustrated in Figure 2. The 1/0 pin should be pulled up to V using a resistor with a value range of sq to kick. This configuration will result an active-low input. When the button is pressed, the 1/0 pin will result a logic O and vice versa. Figure 2: The push button as an input for PICK Figure 4: The complete circuit design of Smart Electric Fan An 1/0 pin is applied for one LED, as an output for PICK microelectronic.

The connection of the LED to the 1/0 pin is shown in Figure 3. The function of resistor is to protect the Temperature sensors will detect the temperature from the rounding while PICK will measure the temperature. PICK is International Journal of Science and Research (SIRS), India Online SINS: 2319-7064 an temperature sensor A detects the temperature is higher than CHIC, and the temperature sensor B detects the temperature lower than

CHIC, LED A and fan A will be on while LED B, fan B and buzzer are off. If the temperature sensor A detects temperature lower than CHIC, and the temperature sensor B detects the temperature higher than CHIC, LED B and fan B will be on while LED A, fan A and buzzer are off.

If the temperature sensor A detects the imperative higher than CHIC, and the temperature sensor B detects the temperature higher than CHIC, both Leeds and fans will be on as well as the buzzer and vice versa. The higher input voltage will produce excessive heat at LAMELY voltage regulator. Typically, the voltage used is V. The LAMELY regulates the given voltage of veto supply for the PACIFISTIC and push button. The purpose of using diode ODL is for the circuit protection when the polarity of the power source is incorrect. Capacitor CLC and capacitor CA are used to stabilize the voltage input and output of the LAMELY. DO is a green LED, which functions as a rower indicator. Referring to Table 1, the level O indicates that all fans and Leeds A and B are off.

It is because both sensors do not detect the actual set of temperature for both fans and Leeds to turn on. Both fans and Leeds will turn on when the actual set of temperature in both sensors are detected. The setting temperature for sensor A is above CHIC to turn the fan and LED A on, while the temperature for sensor B is set to be above of CHIC to turn on the fan and LED B. Level 1 is when the fan and LED A are turned on, while level 2 is a condition where the fan and LED B are turned on. If both imperative sensors detect the temperature above CHIC and CHIC, both fans and Leeds will also turn on. This is known as level 3, which indicate a fire case situation.

The buzzer will act as an alarm to alert people about the emergency occur.

4.

Conclusion In conclusion, the process in developing this innovative circuit is successfully done. The hardware implementation and its operation is functioning accordingly and smoothly following the procedure. High priority has been given to make the circuit simple but efficient with high reliability. Some slight of modifications have been made from the runner and existing technology features to improve its performance. The circuit has fulfilled the main objective, controller with Pl. It has a special safety feature by using a buzzer to produce the alert signal if the temperature become overheat. This circuit is really practical to be applied, especially in today's hot condition.