

Title: Fume Extractor with Warning System for Powder Shaker & Dryer Using ATmega328P

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Objectives

1. To utilize fans in exhausting fumes from powder shaker and dryer machines
2. To use ultrasonic sensor in measuring condensed fluid in the system
3. To apply combinational circuit in powering the warning system for the fluid level monitoring

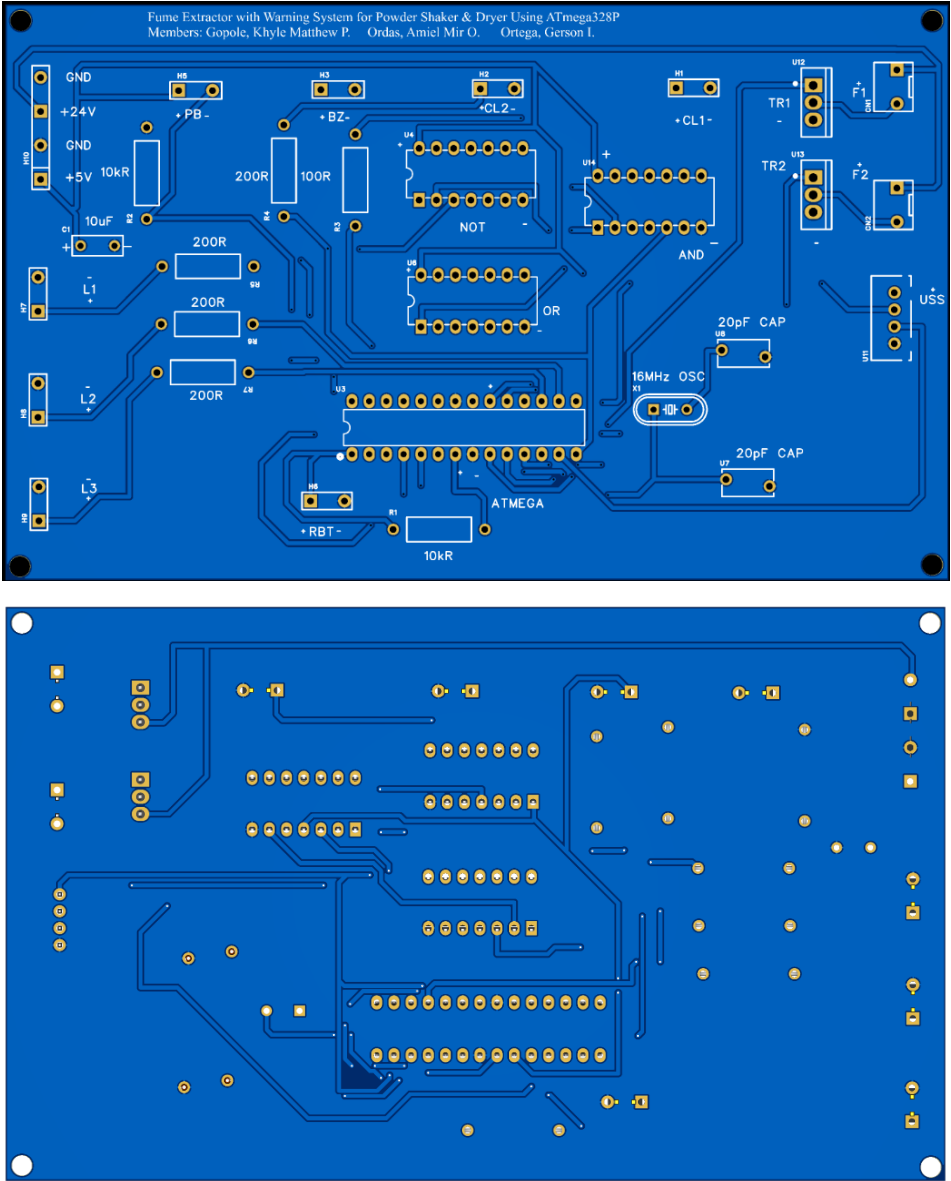
Discussion

Powder shaker and dryer machines are used along with plotter printers in heavy printing businesses. Due to the hot powder and fumes emitted by the machine during printing sessions, a device must be used to exhaust these fumes. Since hot fumes can condensate when exposed to a colder area, a warning system must be implemented to monitor the fluid generated from condensation which could affect the system itself. Thus, a fume extractor with a warning system was developed to prevent these problems.

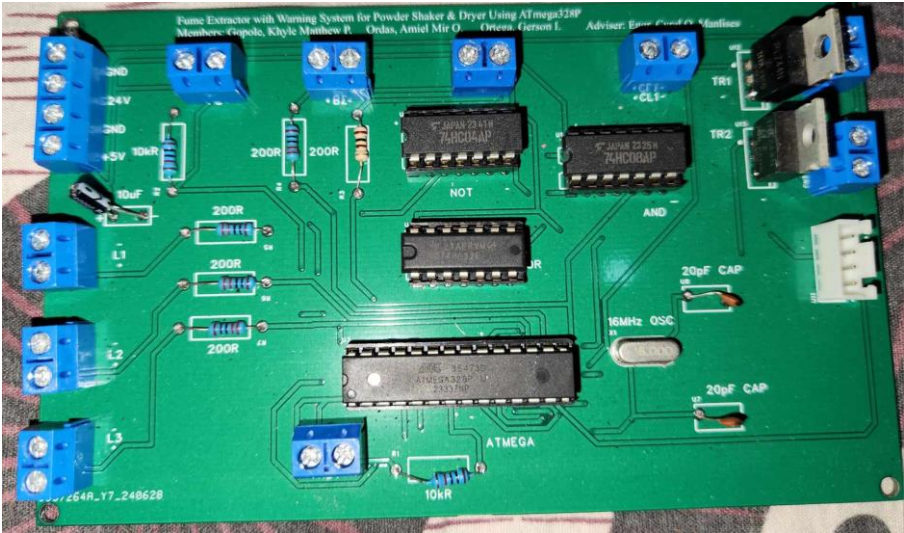
List of materials:

- 1 pc ATmega328P
- 1 pc 24V and 5V Dual Switching Power Supply Unit
- 1 pc Ultrasonic Sensor
- 2 pcs Buttons
- 5 pc LEDs
- 1 pc Buzzer
- 2 pcs 24V DC Fan
- 2 pcs IRLZ44N MOSFET Transistor
- 1 pc 74HC08 AND Gate IC
- 1 pc 74HC32 OR Gate IC
- 1 pc 74HC04 NOT Gate IC
- 1 pc 16MHz Crystal Oscillator
- Resistors and Capacitors
- Terminal Blocks
- Wires
- Custom Designed PCB

Printed Circuit Board:



Actual PCB Setup:



Sample Picture of Prototype:

