

Metal and Nonmetal Product sorting System with conveyor belt and Pneumatic Technology

About This Project:

Our project is designed to separate metal non-metal objects. We are using Arduino Nano for controlling our project , which is acting as the main controller here. Also used here sensors, relays, valves, motors and air cylinders. Everything comes connected with Arduino. Here the current from AC is entering the circuit at 12 volts via SMPS. The Arduino Nano is equipped with two sensors. The proximity sensor and this IR sensor are useful for sensing the product. The IR sensor senses the object and the proximity sensor detects whether it is metal or not. If the conveyor belt rotates, the belt will stop when the object comes in front of the sensor. Then check the object if it is metal then a Pneumatic cylinder will put it in a specific box . In this way we can easily distinguish between metal and non-metal objects in this machine.

Block Diagram:

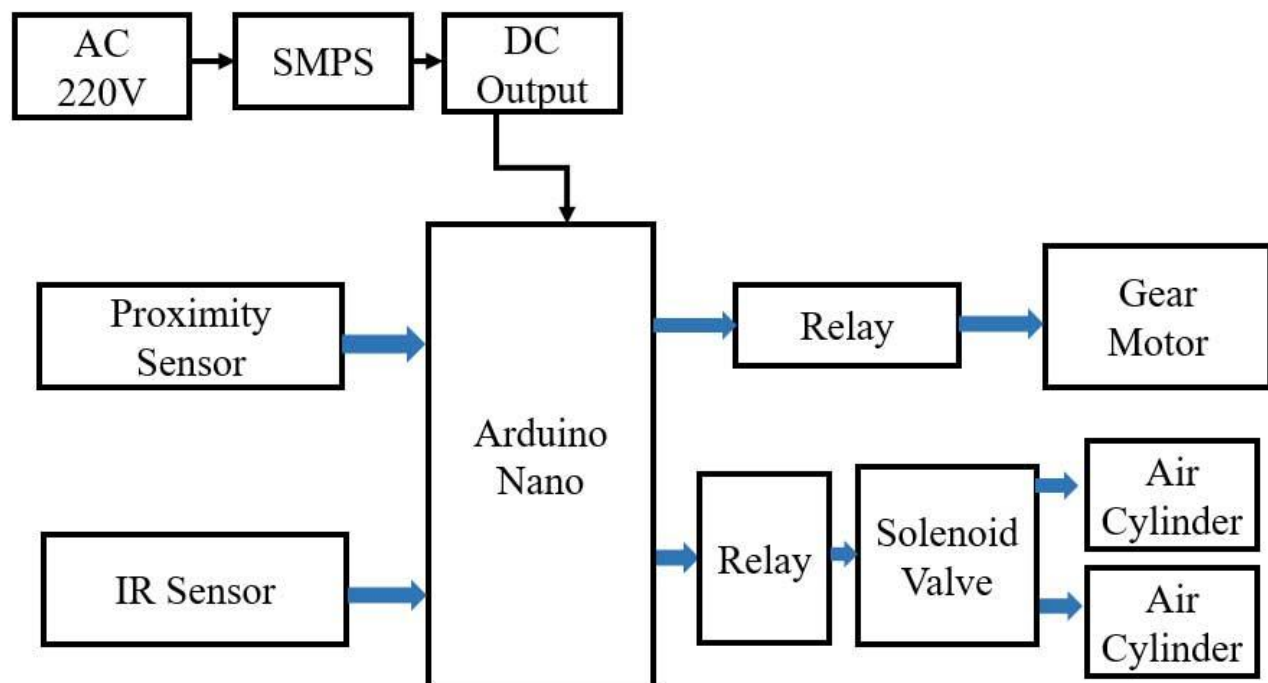


Figure: Block Diagram of Metal & Nonmetal Product sorting System with conveyor belt & Pneumatic Technology.

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Required Instruments:

- DC Gear Motor.
- IR Sensor.
- Proximity Sensor.
- Air Cylinder.
- Air Compressor.
- SMPS
- Relay
- Pneumatic Solenoid Valve.
- Arduino Nano .

Advantages:

There are many advantages of our project because of its accuracy. Some of the advantages are pointed out below:

- Good accuracy to find metal and non-metal object.
- Time saving machine for industrial work.
- Very effectively work for product peak and place.
- Reduce energy waste.
- No Oil consumption.
- Less skill technicians is sufficient to operate.
- Installation is simplified very much.
- Less time and more profit.
- Simple construction
- Reduced weight of the system.
- Ease of operation.

Applications:

The application areas for this project in this modern and practical world are huge and some of these are given below:

The project has a major application in the

- It can be used for Industrial work.
- It can be used in factories for peak and place.
- It can be used in pharmacy.
- It can be used for metal no-metal separator.

N.B: Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.

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