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**ABSTRACT**

The main aim of this paper is to design and employ of saving time and reduce human efforts in like sugar industry, food industry, and coal industry. Generally an industry consists of many number of electrical and electronic devices or equipment's. To control and monitor all these equipment's or appliances we need a person or controlling system. In this paper we are presenting the working of sugar factory by using an electronic circuit in an easy way without having human being. This paper describes the complete working of electrical and electronic devices with automatic control and also time saving of industry for better productivity.

**KEYWORDS:** Photo Diode, LCD display, DC motors, Conveyor, Relay, GSM, Power Supply, Load Cell.

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**INTRODUCTION**

Today time is a most valuable thing in the world. So we have to save the time to give for our next generation. Sugar Factory Automation are preferred over time controlling and reducing human efforts. The design of this setup to saving project can handle controlling of electrical and electronic devices, appliances etc. Through this project we are tried to show a smart way to control the time consumption and time saving in sugar industry, coal industry, or any industry in which the conveyor belt is used. In this project sugar sacks are to be counted by IR pair sensor. Also the weight of every sack of sugar is measure and this result display on the LCD display. By GSM we can control or know the status of the plant. GSM controls the conveyor and controls the device.

**MATERIAL**

- GSM
- Microcontroller 8051
- Load cell
- IR pair sensor
- Conveyor belt
- Power supply
- LCD module
- Relays to operate Devices

**GSM**

This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. Advantage of using this modem will be that you can use its RS232 port to communicate and develop embedded applications. Applications like SMS Control, data transfer, remote control and logging can be developed easily. The modem can either be connected to PC serial port directly or to any microcontroller through MAX232. It can be used to send and receive SMS or make/receive voice calls. It can also be used in GPRS mode to connect to internet and do many applications for data logging and control. In GPRS mode you can also connect to any remote FTP server and upload files for data logging.

**IR pair**

The transmitter part of the sensor project is an Infrared (IR) Led which transmits continuous IR rays to be received by an IR receiver. The output of the receiver varies depending upon its reception of IR rays. Since this variation cannot be analyzed as such, therefore this output can be fed to a comparator. Here operational amplifier (op-amp) of LM 339 is used as comparator. When the IR receiver does not receive signal the potential at the inverting input goes higher than that at non-inverting input of the comparator (LM 339). Thus the output of the comparator goes low and the LED does not glow. When the IR receiver receives signal the potential at the inverting input goes low. Thus the output of the comparator (LM 339) goes high and the LED starts glowing. Resistor R1 (100  $\Omega$ ), R2 (10k  $\Omega$ ) and R3 (330  $\Omega$ ) are used to ensure that minimum 10 mA

current passes through the IR LED, photodiode and normal LED, respectively. Resistor VR2 (preset=5k  $\Omega$ ) is used to adjust the output. Resistor VR1 (preset=10k  $\Omega$ ) is used to set the sensitivity of the circuit. Read more about [IR sensor](#) here.

**Load cell**

The heart of any weighing system is the load cell. Whilst they are not exciting to watch, load cells are highly accurate transducers which provides the user with information not generally obtainable by other technology due to commercial factors. Load cells are designed to sense force or weight under a wide range of adverse conditions; they are not only the most essential part of an electronic weighing system, but also the most vulnerable. In order to get the most benefit from the load cell, the user must have a thorough understanding of the technology, construction and operation of this unique device. In addition, it is imperative that the user selects the correct load cell for the application and provide the necessary care for the load cell during its lifetime. Understanding these important issues and properly maintaining the load cells will ensure trouble free weighing for a long period of time.

**Functional Block Diagram**

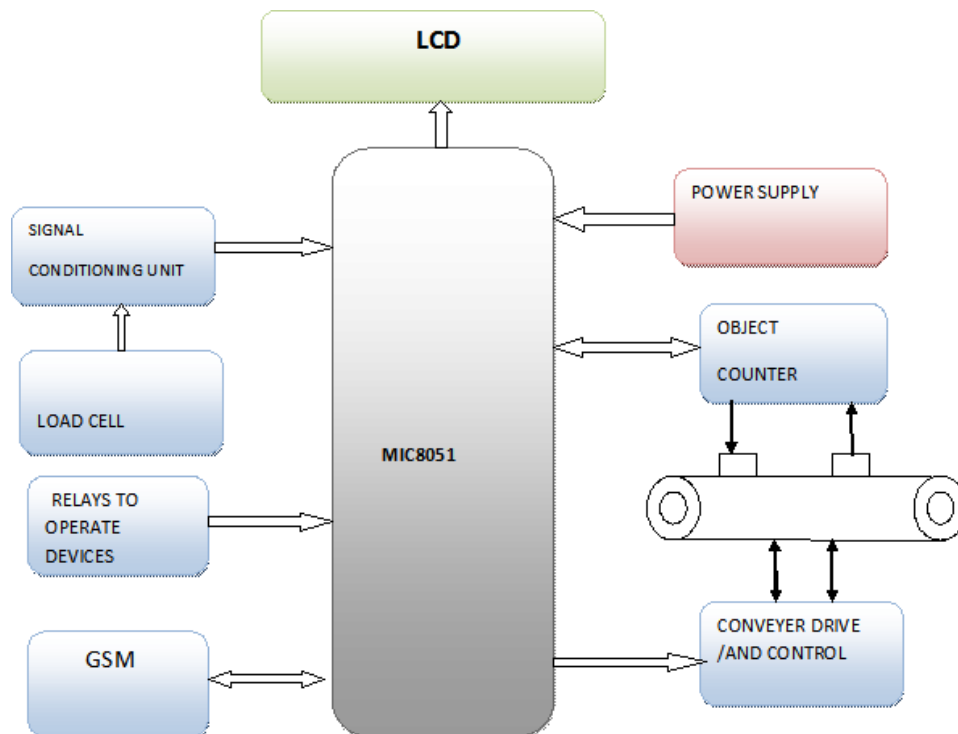


Fig:-Functional block Diagram

**CONCLUSION**

In this experimental setup, we are able to control the devices automatically as required and By implementing this setup, we can expect more time in sugar factory . This device is compatible with our existing system used for providing comfort.In this paper we have developed a real time model that can control and monitor the complete status of all appliancesof any industry like coal industry, food industry, sugar industry.

**REFERENCES**

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