# **Cement Bags Receipt Automation on Customer End**

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**Abstract**: Cement Corporation restricted is totally automatic from stone quarry and crushing plant to packing and dispatch section. Power provides for electronic devices is usually divided into linear and switch power provides. The linear provide is also a relatively easy vogue that becomes more and more massive and important for prime current devices; voltage regulation terribly very linear provides might end in low efficiency. A switched-mode provider of identical rating as a linear provide area unit getting to be smaller, is typically tons of economical, but area unit getting to be tons of sophisticated .The cement baggage is calculated by measure the load of the load within the lorry and it may be displayed within the LCD screen that is visible to the lorry driver. And conjointly GPS are going to be connected with the setup that helps to trace the situation of the lorry and GSM 800C are going to be connected that helps in obtaining notifications for the manager within the packing and dispatch plant that what percentage baggage were delivered at every of the client location.

Keywords: cement, automation, MPLAB, Load cell, GPS

# **1. Introduction**

Cement Corporation Limited is totally robotized from limestone quarry and squashing plant to pressing and dispatch area. Burden cell is appended to the lorry base to figure the heaviness of the concrete sacks and their amount. The Bending bar sort of burden cell will be actualized. There would be four burden cells in the model at four corners of the lorry which are fit for estimating 40 ton. Sheet metal is one in all the natural structures utilized in molding and it is cut and twisted into a spread of shapes. Innumerable regular items are manufactured from sheet metal. Thicknesses will differ essentially; remarkably thin sheets ar pondered foil or leaf, and things thicker than about six millimeter (0.25 in) ar contemplated plate. Sheet metal is offered in level things or twined strips. A Wheatstone scaffold is an electrical gadget utilized in a heap cell to live a general change in obstruction. Builds affectability and decreases the effects of temperature. The circuit appeared above is known as a Wheatstone scaffold circuit. It is wont to understand the obstruction of an opposition or it is utilized with sensors, similar to thermostats, to shape estimations. The change includes quantization of the information, subsequently it basically presents little amount of blunder or commotion. Besides, rather than ceaselessly playing out the change, an ADC does the transformation intermittently, testing the information, constraining the passable data transmission of the info signal. The PIC16F690 is a group of microcontrollers from Microchip Technology. It utilizes learned quality advancement climate alluded to as the MPLAB. While programming the PIC, a couple of apparatuses and segments are required. A constructing agent/significant level compiler; this is the product bundle which incorporates a debugger, test system and other bolster programs, the MPLAB.

# 2. WORKING PROCEDURE

The working method of this procedure is inconceivably basic. A heap cell might be a "heap transducer" that changes over the heap or burden performing on it into electrical signals. A heap cell comprises of Associate in Nursing part|metal} compound spring component, strain measures (filling in as sensors) and an electric circuit. The strain checks themselves region unit justified onto four regions that become altogether twisted inside the spring part. The heap cell distinguishes the power of the contortion as voltage modification. This Bending Beam load cell (once in a while called a strain measure) can make an interpretation of up to 50kg of weight (power) into an electrical sign. With this measure you might have the option to tell basically anyway critical Associate in Nursing article is, if an item's weight changes after some time, or on the off chance that you just need to detect the nearness of Associate in Nursing object by action strain or burden applied to a surface.



**Figure 1:-Block Diagram** 

#### **2.1.Metal Plate**

Sheet metal will be metal shaped by a mechanical procedure into meager, level pieces. Sheet metal is one among the natural structures used in metalwork and it is cut and bowed into a scope of shapes. Endless regular items are manufactured from sheet metal. Thicknesses will fluctuate fundamentally; remarkably thin sheets ar contemplated foil or leaf, and things thicker than about six millimeter (0.25 in) are viewed as plate. Sheet metal is accessible in level pieces or snaked strips. The loops are framed by running a ceaseless sheet of metal through a move pilgrim. In a large portion of the globe, level strong thickness is efficiently spread out in millimeters. In the US, the thickness of level strong is regularly ostensible by a standard, non-straight measure known as its check. The bigger the measure assortment, the more slender the metal. Regularly utilized steel level strong reaches from thirty measures to in regards to seven checks.



**Figure 2:-Metal Plate** 

#### 2.2.Bridge Circuit

The stability equation of Regenerator temperature is specified by bridge is an circuit. Used in a load cell to live AN overall amendment in resistance. Increases sensitivity and reduces the affects of temperature. The circuit shown above is called a Wheatstone bridge circuit. It is wont to notice the resistance of a resistance or it is used with sensors, like thermistors, to create measurements.



**Figure 3:-Wheatstone Bridge** 

#### **2.2.1.Output/Input Calculations**

The ascendancy of presented variables is important for the a The total output signal of a multiple load cell system will be approximately the arithmetic mean value of the individual load cell outputs. The combined output can be calculated by:

Uo=((DL+AL) / (Emax\*N))\*S\*Ue

Where, Uo- Output voltage (mV) AL -Applied load

Emax- Load cell capacity DL -Deadload or tareweight

#### 2.2.2.Strain Gauge

When steel cylinder is subjected to a force, it tends to change in dimension. On this cylinder, if the strain gauges are bonded, the strain gauge also is stretched or compressed, causing a change in its length and diameter. This change in dimension of the strain gauge causes its resistance to change.



**Figure 4:-Strain Gauge** 

#### 2.3. A/D Converter

The relative gain array indicates how the inputs ought to be in this part. An ADC converts a continuoustime and continuous-amplitude analog signal to a discrete-time and discrete-amplitude digital signal. The conversion involves quantization of the input, so it necessarily introduces a small amount of error or noise. Furthermore, instead of continuously performing the conversion, an ADC does the conversion periodically, sampling the input, limiting the allowable bandwidth of the input signal.



Figure 5:-A/D Converter

#### **2.4.PIC microcontroller**

Basic Idea is to use added controllers to atone for action a In this section a microcontroller is a highly integrated chip that contains several components to perform a specific task or control a particular system. Typically it includes a CPU, memory for the program and data storage, I/O ports, internal clock and peripheral devices such as timer, counter, analogue to digital converter and serial communication facilities. In this paper the PIC16F690 is employed together with a weight sensor and other components .



Figure 6:- PIC Microcontroller

# **3.Global Positioning System (GPS)**

A GPS recipient figures its situation by precisely transient request the sign sent by GPS satellites high higher than the world. Each satellite much of the time transmits messages that encapsulate the time the message was transmitted, precise orbital information, the general framework wellbeing and unpleasant circles of all GPS satellites.

#### 3.1. Global System For Mobile Communications (GSM)

GSM, that represents worldwide System for Mobile interchanges, rules in light of the fact that the world's most commonly utilized phone innovation. Phones utilize a telephone utility transporter's GSM organize by discovering phone towers inside the close to space. The starting points of GSM is inferred back to 1982 once the buff Special Mobile (GSM) was made by the ecu Conference of

correspondence and Telecommunications Administrations (CEPT) to structure a skillet European versatile innovation.

#### 4. LCD Display

Liquid crystal cell displays (LCDs) are used in similar applications where LEDs are used. These applications are display of display of numeric and alphanumeric characters in dot matrix and segmental displays.

LCDs are of two types :

I. Dynamic scattering type II. Field effect type.

#### 5. Power Supply

Power supply is a reference to a source of electrical power. A device or system that supplies electrical or other types of energy to an output load or group of loads is called a power supply unit or PSU



**Figure 7:- Power Supply** 

# CONCLUSION

The heaviness of the cement packs and their amount can be determined by this proposed venture. After the heaps get conveyed at the client point, the remaining parity of the concrete packs can be determined by estimating the heaviness of the heap in the lorry and it could be shown in the LCD screen which is noticeable to the lorry driver. GPS associated with the arrangement follows the location of the lorry and GSM 800C associated helps in getting warnings forthe supervisor in the pressing and dispatch plant about the conveyed packs at every one of the client area. It helps in conveyance of the heaps more immediately and shaky correspondence between the heap dispatch focus and the conveyance station. Additional time can be spared and the exactness level in estimation of the heaps with the assistance of this venture. This paper can be executed for robotization in the gauging segment of the ventures.

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