Production of Non-Convetional Energy Through Elevator

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Abstract- *Aim: This paper presents Power Generation for permanent magnet Elevator motor To generation of the electricity by using conventional and non-conventional sources. The elevator motor is rated at KW in lifts. It Projection out, organizes, and assemblage complex and scattered information on multiple manner of elevator design, and presents them in an accessible and non-technical discourse. This paper is shows the way of controlling the load demand of power according to the availability of supply by using microcontroller atmega328*

Keywords- atmega328, Estimation, Inputs, energy saving; efficiency; speed; long distances; comfort; safety

I. INTRODUCTION

In now days, the increasing demand of electricity is the main problem. Due to hug use of electricity it creates large demands related problems. The total electricity generating capacity of India from January 1, 2017 is 288,005 MW with 60.8% share from coal, 8.5% from gas, 3% from diesel 2% from nuclear and remaining 28% from Renewable Energy (RE) sources. In this study can be applied for future use of in existing system of elevator. In this paper, to overcome the loadsheding problem described a way to generate the electricity from conventional and non-conventional sources such like footstep, any type of rotary motion. The main advantage behind this system is that, it can generate the power according to the demand of load with less coast rather than the conventional electricity generating method.so, it can be design for the privet application as per demand of plant, industry and other uses

a) Objective :- The main objective behind this project is to generate the power using elevator motor for the various type of application.

II. MODEL DESCRIPTION

Block Diagram Specification :-

2.1] Microcontroller ATmega328

The ATmega328P is a low-power CMOS 8-bit microcontroller based on the AVR Enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega328P achieves throughputs approaching 1 MIPS per MHz allowing the System designer to optimize power consumption versus processing speed.

2.2] Transformer:-

Step down transformer is the first part of regulated power supply. To step down the mains 230V A.C. we require step down transformer. Following are the main characteristic of electronic transformer.

1. Power transformers are usually designed to operate from source of low impedance at a single freq.
2. It is required to construct with adequate insulation of obligatory dielectric strength.

Transformer ratings are expressed in volt–amp. The volt-amp of each secondary winding or windings are added for the total secondary VA. To this are added the load losses
Voltage:most irons run from the mains at 240V. However, low voltage types (e.g. 12Vor 24V) generally form part of a "soldering station" and are designed to be used with a special controller made by the same manufacturer

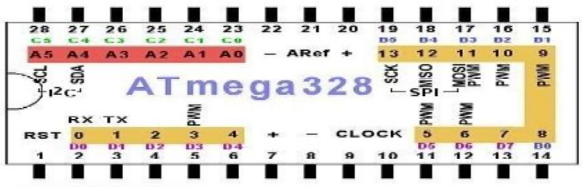

Figure 1:- Pin structure of ATmega328

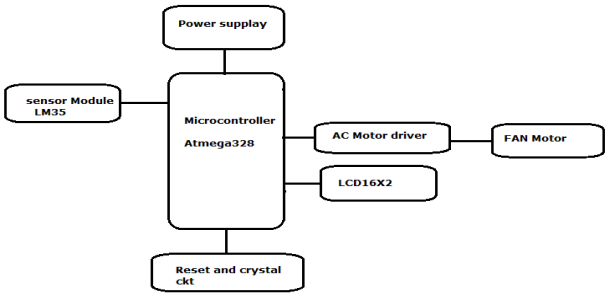

Figure 2:- Block Diagram of module.

2.3) Voltage Regulators:-

Here the voltage regulators are used to generates the dc regulated voltage supply . One 7805 three terminal voltage regulator have input, ground and output pins. Specifications **:** Available o/p D.C. Voltage = + 5V. Line Regulation = 0.03, Load Regulation= 0.5 V_{in} maximum= 35 V Ripple Rejection = 66-80 (db)

2.4) Crystal Oscillator:-

A crystal oscillator is an electronics oscillator circuit that use the mechanical resonance component of vibrating crystal of piezoelectric material to create an electrical signal with a precise 16MHz frequency.

2.5) 16*2 LCD:-

It is an electronic display kit which use for wide range of application. The 16*2 LCD means it can has 16*2 line structure i.e. 16 characters per line. In this LCD each character is displayed in 5*7 pixel matrix. This display are economical, easily programmable and no limitation of display special & custom characters.

2.6)Arduino:

Arduino is an open-source electronics prototyping platform based on flexible, easy-to use hardware and software. It's intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. Arduino can sense the environment by receiving input from a variety of sensors and can affect its surroundings by controlling lights, motors, and other actuators. The microcontroller on the board is programmed using the Arduino programming language and the Arduino Development Environment. Arduino projects can be stand-alone, or they can communicate with software running on a computer

2.6)Rectifier Unit

Rectifier unit is a device. which converts A.C. into pulsating D.C. Generally semi-conducting diode is used as rectifying element due to its property of conducting current in one direction only. Generally there are two types of rectifier.

1) Half wave rectifier
2) Full wave rectifier.

In half wave rectifier only half cycle of mains A.C. is rectified so its efficiency is very poor. So we use full wave bridge type rectifier, in which four diodes are used. In each half cycle, two diodes conduct at a time and we get maximum efficiency at o/p.

2.7)Filter Circuit

Generally a rectifier is required to produce pure D.C. supply for using at various places in the electronic circuit. However, the o/p of rectifier has pulsating character i.e. if such a D.C. is applied to electronic circuit it will produce a hum i.e. it will contain A.C. and D.C. components. The A.C. components are unenviable and must be kept away from the load. To do so a filter circuit is used which removes (or filters out) the A.C. components reaching the load. Obviously a filter circuit is installed between rectifier and voltage regulator.

III. WORKING

This is expensive fully transistor rise inverter capable of driving medium loads of the order of 40 to 60 watts using battery of 12V,7.8Ah or higher capacity. Transistors T1 and T2 (BC548) form a 50 Hz multivibrator. For obtaining correct frequency, the values of resistors R3 and R4 may have to be changed after testing. The complementary outputs from collectors of transistors T1and T2 are given to PNP Darlington pairs drivers stages formed transistors pairs T3-T4 and T6-T7 (utilized transistors BD140 and 2N6107). The outputs from the drivers are fed to transistors T5 and T8 (2N3055) connected for push pull operation. Somewhat higher wattage can be achieved by increasing the drive to 2N3055 transistors (by lowering the value of resistors R7 and R8 while increasing their wattage). Suitable heat sinks may be used for the output stage transistors. Transformers X1 is a 230V to 9V-0-9V, 2A secondary used in reverse.

IV. POWER SUPPLY DESIGNING

Power Supply Designed and Circuit Connection

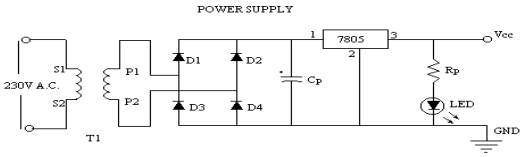

Figure 2: - Block Diagram of Power Supply

V. RESULT

In this paper we observed that, it is one of the best convenient method to avoid the load demand problems as well as provide the free power when the lifts is in working condition. In future this system can be also implemented as regenerative lift unit.

VI. CONCLUSION

Here from above we conclude that generation of electrical energy with elevator is cheaper than coasty conventional method for the specific requirement. It is one of the alternative method in presence of failure of power supply during emergency.

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