"Food Serving Machine"

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Abstract: *The aim of study was to investigate the relationship between service quality food quality customer satisfaction and customer retention in limited service. our country is developing throughout technological innovation in various sector and having large number of engineers , we are not thinking of developing technologies for sake of our peoples day to day life .the food retailing and food service sector is not only an important component of the food marketing channel but is also vital to the Indian economy . In this system unique serving of food is possible by making serving of food completely automated. Which is completely hygienic process can be used anywhere in public and private sector it does not need any man power. A small IC is used for movement of the plate a 230 volt step down to 12 volt supply is used a 12 volt dc supply is given to the ECU in the system to motors are used of 5hp and 10hp again a step down transformer is a main component of the project SPDT relay an DPDT relay are on/off are main of system a heater is used to maintain the temperature of the food in the system.*

Keywords: *Transformer, IC 89C51 Microcontroller, L293 Motor Driver*

I. Introduction

Our project focuses on design and implementation of automation of food serving system. In current scenario all the public and private sector opts for automation in there process due to ease of access and speed of operation. With the system we believe we will suit the needs and the necessity of the future modern world and people. In short this project ensures the efficient reach of food to common people and can be used anywhere in public or in private sector (railway station, bus top etc.) which can give contribution to MAKE IN INDIA project.

This system works in 12 volt supply. Here the system uses a step down transformer which is connected to power mains to step down the voltage from 230 volt to 12 volt. The 12 volt dc supply is given to ECU (electronic control unit.) to initiate the system one need to insert the coin (as on the input command) to the cru (coin recognize unit) and also need to feed the desired output command (desired to have tea coffee etc.) once the input is being field to the ECU , ECU process the command and passes the signal to the relay unit . Once the input is field to the ECU, ECU process the command and passes the signal to the relay unit. Relay logic unit is used as a high current to switch control by low current on/off. We are using SPDT relay and DPDT relay. Three motors are used to for solid food serving purpose ECU also passes the signal to the amplifier which works to improve the power signal heater is connected to the relay logic unit which is used for the heating purpose. Heater is used to maintain the temperature of liquid and solid food. The ic 89c51 is an 8bit microcontroller IC and it belongs to atman's8051 family ic is used in this system. ATMEL 89c51 has 4kb of flash programmable and erasable read only memory (PEROM) and 128 bites of ram it can be erased and programmed to a maximum of 1000 time in 40 pin AT89c51 there are 4 ports designated as P_1, P_2, P_3, P_0 all this port are 8bit bidirectional ports that is they can be used as input and output ports. except P0 which need external pull-ups rests the ports have internal pull-ups when one are written to this ports pins they are pulled high by internal pull-ups and can be used input. These ports are also bit addressable and so there bit can also be accessed individually. This system improved service at faster rate. Does not required any human presence it is completely automatic process system. There are some objectives behind making of this project is given below:-

i.   It reduces human efforts.
ii.   More hygienic food.
iii. Easily operated system.
iv.   Fixed output.
v.   Accurate Uniform distribution.
vi.   Requires less times
vii. Avoids theft.

II. Literature Review

We get information about modern food serving machine which makes distribution of food easy by j.clara, m.jagdeeshraja. And we also make improvement in quality of food which can also help in "MAKE IN INDIA" project and "SWACCHA BHARAT ABHIYAN" distribution and corruption. N.suthanthira vanitha automatic ration system using embedded system technology, internal general and innovation research in electrical instrumentation and control engineering vol.1 distribution and corruption controlling system is the project that will allow a smooth and easy ration distribution and controlling. This system enabled the distribution of food equally among poor people. The commodities are store in storage tank. When good are inserted in ration shop than that quantity of food is updated in web server that website can be accessed by collector whenever he requires the ration from respective ration shop. s.vennal venkatraman , ratio whiz international journal of emerging technology . shivbhakt described the compact to automate the PDS . A government of India indicative process in which a fix amount of ration is provided monthly to the people by PDS store. The increased corruption in the market sector can be prevented if the system become automated, increased adulteration can be prevented as well as, the hoarding done by the officials and laborers of government there will be two units. Main control unit is placed at ration shop, which will completely control the activities at shop like customer identification, grain distribution and database updating. In this food serving system a complete automatic process is used. No manpower is required it's an electrical based system. Can be modified and can make it a solar based system and the food serving is simultaneous can make happen at a time. Can also make two or three operation possible at a time and can be used anywhere. It's a completely unique and automated process of serving of food.

III. Methodology

Fordoing a work and achieving the objective mention above the following methodology is followed by us Food server machine, the system works on 12 volts supply. Here, the system uses a step down transformer which is connected to the power mains to step down the voltage from 230 volts to 12 Volts. The 12v DC supply is given to the ECU (Electronic Control Unit).
To initiate the system one need to insert the coin (as on the input command) to the CRU
(Coin Recognaitation Unit) and also need to feed the desired output command (desire to have tea, coffee, etc.). Once the input is being field to the ECU, ECU process the command and passes the signal to the relay unit.
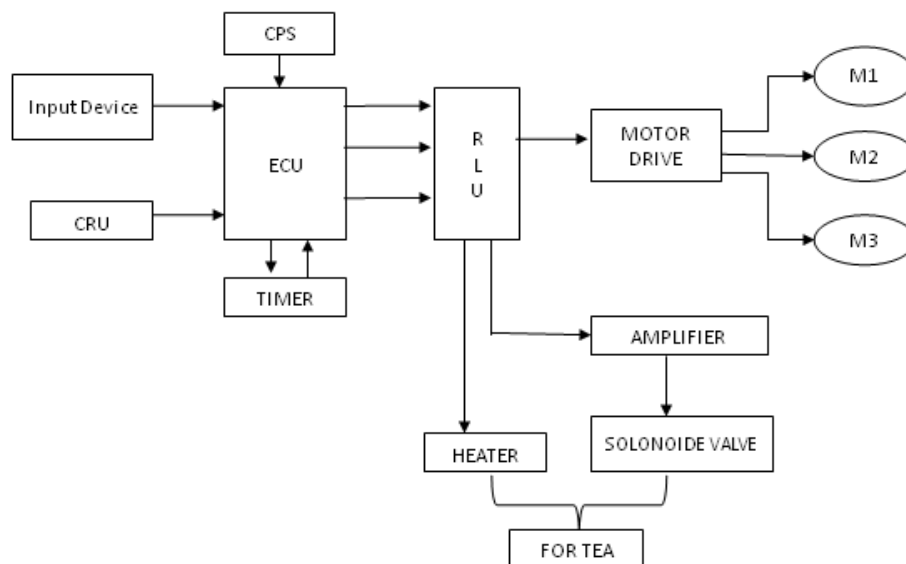

Fig. Block Diagram

Relay logic unit is used as high current to switch controlled by low current ON/OFF. We are using SPDT relay and DPDT relay. Three motors are used for solid food severing purpose. ECU also passes the signal to the amplifier which works to improve the power signal.

Heater is connected to the relay logic unit which is used for the heating purpose. Heater is used to maintain the temperature of solid and liquid food.

Future Scope:-

It can be used in highly crowded areas. This system can be used 24 hr's a day No human presence required improved service at faster rate. By using this system the major problems like bribery, irregular distribution and other difficulties faced by the people. Illegal activities in the shop can be greatly reduced by this method. The product arrival is intimated to the people so it helps the people to save their time by not waiting in front of the shop. The distribution process is automated using this project and so the government facilities reach people properly. The corruption and bribery is the major problem in product distribution which can be avoided using this system. The computerized database maintained avoids wrong entry of the product by the officials and provides authenticated distribution.

Advantages:-
i.   It reduces human efforts.
ii. More hygienic food.
iii. Easily operated system.
iv. Fixed output.
v.   Accurate Uniform distribution.
vi. Requires less time.
vii. Avoids theft.

Applications:-
i.   It can be used in highly crowded areas.
ii. This system can be used 24 hours a day
iii. No human presence required.
iv. Improved service at faster rate

IV. Conclusion

Thus we concluded that by using above circuit we can monitor the unique food serving system. The system can be applied anywhere in private and public sector. This system can be modified by making it run on solar energy again by modifying this system simultaneous operation can make possible.

In this system complete hygiene can be followed and this system can give contribution make in India project.

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