



Research Article

PULSE MONITORING - ENGINE CONTROL SYSTEM

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ABSTRACT

Now a days increasing accidents due to driver’s health issues in heart is a big problem in society. The purpose of this research is to decrease the accidents that are not in the hands of humans. With the help of an electronic circuit, this issue can be solved. By the help of this circuit, a vehicle can be controlled with the help of driver’s heart pulse when he has a health problem in the heart.

Key words:

Accidents, Heart Pulse, Circuit

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INTRODUCTION

A major issue in the society is accidents occurring due to driver’s heart attacks. To avoid these types of deaths this research have come forward with an electronic circuit which connects driver’s heart to engine. Here there is a heart pulse monitor which is placed on steering wheel or on the handle of the vehicle. The heart pulse sensor continuously observes the driver’s heart rate and communicates the data to the micro-controller. If in case the sensor detects that there is an increase or decrease of heart beat then the micro-controller sends the data to the servo motor. Then the servo motor immediately cuts the starter circuit and there by stopping the engine. As the engine of the vehicle stops running the vehicle also stops gradually.

Working

In the normal condition of the driver the system does not interrupt the engine or vehicle. But in case if the driver’s heart pulse gets fluctuated due to heart attacks, sudden cardiac arrest and if the driver’s heart pulse gets down due to any reason the heart pulse sensor detects the variation in the heart pulse and then sends to the micro-controller then the micro-controller actuates the servo motor according to the code designed by the developer. Now accordingly the servo motor immediately cuts the starter circuit and stops the engine, there by the vehicle also stops and all the people in the vehicle will be safe. To start the vehicle again, a driver with a perfect heart beat is required. Then also the heart pulse sensor monitors the driver and sends a perfect heart pulse data to the micro-controller, then the micro-controller again actuates the servo motor.

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Then the servo motor connects the starter circuit and then the vehicle starts normally.

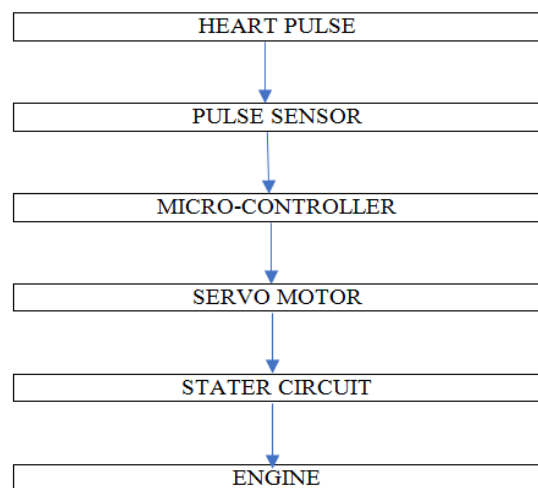
METHODOLOGY

These are the sequence of steps followed in this research,

1. Observing the society
2. Finding problem
3. Solution for the problem
4. Fabrication and assembling
5. Prototyping of the idea
6. Testing prototype
7. Product formation
8. Using the product to solve the problems.

Signal Flow Sequence

This is the way of flow signal in the system



Images

These are the photos of the prototype

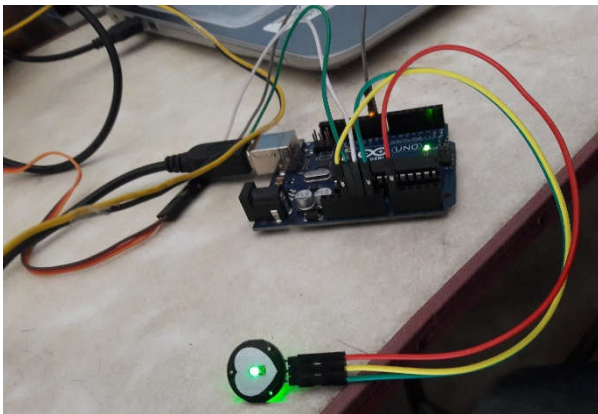


Figure 1

Here in figure – 1, we can see the heart beat sensor which is attached to driver’s wrist and it continuously sends the information to the micro-controller. Then the micro controller actuates the servo motor as required.



Figure 2

Here in figure – 2, we can see the system is connected to the starter circuit of the engine. Now the servo motor actuated by the micro-controller cuts (or) connects the starter circuit, according to the signal sent by the heart beat sensor

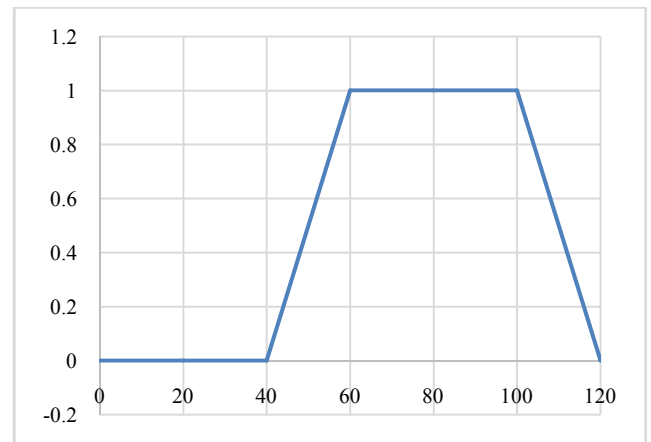
Observations

Heart Pulse in (BPM)	Circuit status	Engine status
0	Dis-connected	Off
20	Dis-connected	Off
40	Dis-connected	Off
60	Connected	On
80	Connected	On
100	Connected	On
120	Dis-connected	off

When the circuit is connected then the engine runs normally.
When the circuit is dis-connected then the engine stops.

RESULTS

The results from the observations are plotted in the graph shown below:



BPM on X – axis and engine running status on Y – axis
‘0’ indicates that the engine is stopped
And ‘1’ indicates that the engine is in running condition

CONCLUSION

Hence, using this system in the automotive field is most advantageous to save the lives of the passengers and the driver’s and this system also reduces the accidents by stopping the engine, so that it also saves the lives of the people travelling in surrounding vehicles.

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