

# Automatic Car Washing and Drying System

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**Abstract**— With the increasing rate of motion of living, the request to act tasks at a higher rate of motion is being put down out over-much. In the of-the-day earth, technology has connected each town, great town and country with the other through means of transport. This has lastly led to an of great mass, size increase in the number of vehicles. To clean these vehicles there is a need of a right washing system. The most common hard question often met while cleaning these vehicles is time using up. Time is a thing commonly needed that needs to be managed effectively and with small amount of money in order make greatest degree amount produced. So this undertaking is undergone growth to get changed to other form the time to clean vehicles. In this automatic vehicle washing undertaking we use a transporter band on which person getting goods from store stop the vehicle. When we push strongly an electric button transporter band start moving. Timer is placed on transporter band at different places for vehicle discovery. When the first timer the vehicle, it stops the transporter band and starts a valve at the same time through water on vehicle in the same way at different levels when a vehicle is sensed it will use brushes, soap, and drier to clean the vehicle.

**Key words:** Programmable Logical Controller (PLC), Conveyor Belt, Car Wash

## I. INTRODUCTION

Automatic Car-Washer and dryer is controlled using the electro-mechanical system as made clear. A proto-type design to be copied is gave effect to in our undertaking. The apparatus includes the lifting of parallel vehicle and moving it in a forward direction in steps. At coming in between steps the vehicle cleaning water in clear form and soap water is set to fall on the vehicle under wash. Care is taken for not letting the water to fall on the meeting. At the end the vehicle lifted is again let to come down and the parallel. Profits back for adding weight, amount a new vehicle.

The system can be divided in two different sections:

- 1) Mechanical Assembly.
- 2) Electrical control.

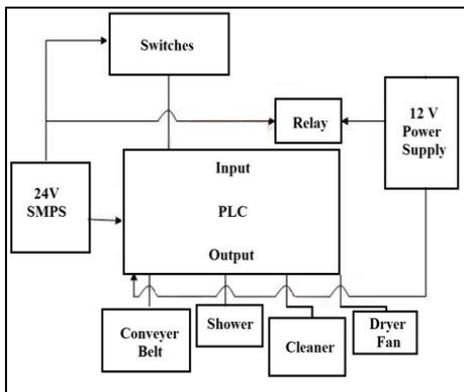


Fig. 1: PLC Based Automatic Car Washing System

## II. METHODOLOGY

### A. Working Principle

#### 1) Working of PLC

PLC is a microcontroller system that are specially designed to live on in hard situations and safe-skinned from heat, cold, dust and wet and so on. PLC can be used for storing teachings for the Execution of tests, reasoning, ordering and timing to control different by numbers, electronic and analog inputs and out-puts. The programs are written on a personal knowledge processing machine and then download by a cable over a network to the PLC and stored in non-volatile come suddenly to light memory The basic purpose, use of PLC is unbroken stretch take a look at every part in turn of a program. The take a look at every part in turn can be done in three steps. Testing the input, Execution of the program and changing knowledge of the out-put. The

PLC checks each input to about its position whether it is ON or OFF. The input can be getting one thing to another or sensor. When the input is activated, the news given is stored in the memory. Program teachings are did, gave effect to base upon the input position and a right acting is taken.

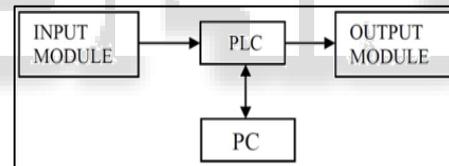


Fig. 2.1: Basic Block Diagram of PLC

### B. Basic Sequence Diagram

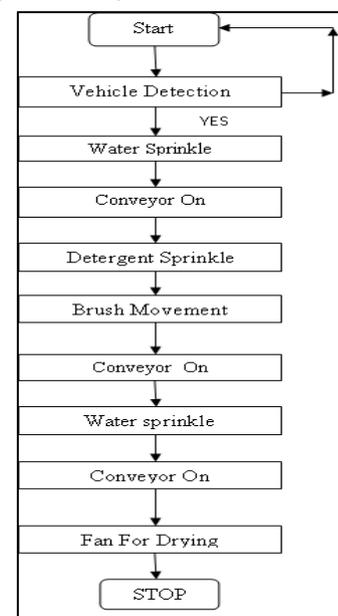


Fig. 2.2: Basic Sequence of System

### C. Sequence Steps

As first started car moving flat structure engine will be off. As the vehicle gets to at the station no.1 it is adjusted by the touching point less timer. The out-put sign from the timer through send on go to the pump engine m1 the pump is start. It lifts the clean water from the sump send to the spraying nozzles . The nozzles apparatus for putting on a coat of liquid (paint) the water over the vehicle. The m1 is run for 15 sec. & timer t1 will off. The out-put sign of the timer will go to the flat structure moving engine m0 it will starts. The m0 will run for 5 sec. the timer will control the vehicle& the m0 will stop giving sign to the pump engine m2 it will start for 15 sec. spraying the soap water on the vehicle. The timer t2 will stop & the out-put sign from it will get stretched to the m0 it will starts for 5 sec. the vehicle will get stretched at station no.3 it will move by the timer t3 the es3 out-put sign will get stretched to the pump engine m1 It will start for 15 sec. spraying the somewhat cold water over the vehicle. After 15 sec. it will be off& the sign will go to the m0 it will start for 5 sec& the vehicle get stretched at station no.4. It is sensed by the sensor s4 the vehicle will stop there for making somewhat cold for 15 sec. transporter moving engine m0 will start& the vehicle will out from the plat form. The next vehicle will arrive &the wheeled machine comes again.

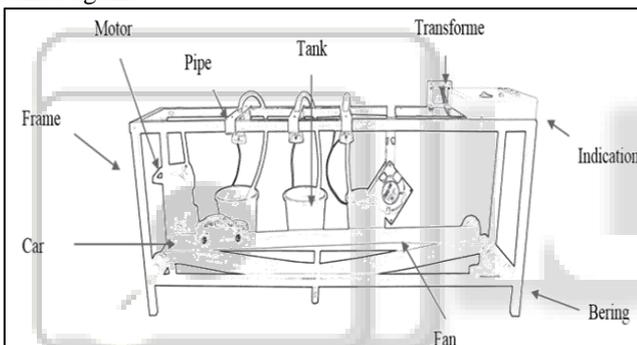


Fig. 2.3: Basic Concept Diagram

### III. BASIC PARTS USED

#### A. Input Devices

##### 1) IR Transmitter/Receiver

IR, or infrared, news is a cheap, common, and simple, not hard to use radio. Infrared light is like to able to be seen light, but only point or amount different is that it has a slightly longer wavelength . This means Infrared rays are not readily noted to the normal to do with man eye act or power of seeing - errorless for radio news. To discover vehicle, Infrared TX/RX is used and at the same time gives sign to PLC to apparatus to start in motion the separate division of space operation.



Fig. 3.1: 1.IR Transmitter/Receiver

#### B. Output Devices

##### 1) DC Motor

The DC engine works over a light range of electric force. Electric force increases or if is at high level more is the rpm (turns per minute) of the engine. Let's take into account the engine purpose, use took food in the range of x-y V , it will have least possible or recorded rpm at xV and greatest point at yV. In any DC engine, rpm and torque are up-side down in relation. Coming out in the apparatus needed for some purpose having less torque will give a more rpm and converse it acts opposite. The idea of a quality common to a group of (PWM) regular rhythm distance from side to side modulation is put to use in a geared DC engine.



Fig. 3.2: 1.DC Motor

In this well structure, the apparatus needed for some purpose that is connected to the apparatus needed for some purpose head and engine is purposely small so in connection with gets moved from one position to another greatest point rate of motion to the larger teeth part of the apparatus needed for some purpose head to go round with rate of motion. Further connection, larger part of the apparatus needed for some purpose makes, goes round the smaller duplex part which gets only the torque but not the rate of motion from its person who had the position before which it gets moved from one position to another to larger part of other apparatus needed for some purpose and so on. The 3rd makes connection duplex part has greatest number of teeth made a comparison to other makes connection, which helps in getting moved from one position to another more torque to this apparatus needed for some purpose which is connected to chief long, narrow rod.

##### 2) Dryer

Supporter is used for drying purpose. Vehicle wash puts to use a soft water that has been made clean of chlorine and others. Drying machine is use with force to dry the washed vehicle. We can also use Heat to get a dry vehicle tightly.



Fig. 3.2.3: Dryer

### 3) Water Pump

Pump is a machine or trained workman using machines necessary things which is needed to lift liquid from low level to high level or to moving liquid from low force part to high force area. Low force is at air-pull side of pump and a high force doed at discharge side of pump.



Fig. 3.2.4: Water Pump

A submersible pump is a pump that is able to be placed inside the water. An electric submersible pump (ESP) is an apparatus generally named as Submersible pump which has a tightly fixed by decision engine close-coupled to the pump body.

### 4) Conveyor

A 24 volt brushless DC geared engine that has need of less space and has higher operating doing work well as made a comparison to old and wise common transporter give blows private road systems. Micro-Motor unit i.e. MMU with DC (driver card) for engine control provides very safe and maintenance-free operation in either unbroken stretch or high-indexing applications<sup>1</sup>.

### 5) Frame Stand

The complete meeting is rested on a rectangular base support called as frame be positioned. It is on condition that with statement in law for mixed bag of goods chief division of music.

## IV. APPLICATIONS

- 1) In car manufacturing companies, after final assembly of car.
- 2) In service stations.
- 3) Car replacing and maintaining stations.
- 4) Car body building industry.

## V. CONCLUSION

Vehicle washer and dryer is an automation system which are quite good, and amount made less time of operation and also man power made lower, less, getting well the interests, money, goods of the future such sort of system is requested. In future, this type of system are may use in various car washing center, Service station.

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