International Journal of Engineering In Advanced Research Science and Technology
ISSN: 2278-2566
October-2016
Volume-2
Issue-5
Page:7923-28

AUTOMATIC DAM GATE CONTROL

D.V.Pavani Divya Sree[1],P.Venkateswarlu[2]
[1]M.Tech Scholar, Dept of ECE, ABR College of Engineering, ABR Nagar, Prakasam Dst, Kanigiri, AP, India. [2]Associate Professor, Dept of ECE, ABR College of Engineering, ABR Nagar, Prakasam Dst, Kanigiri, AP, India.

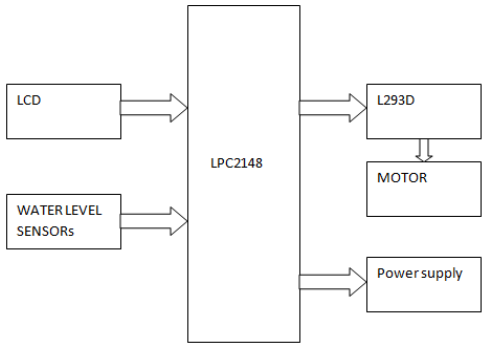
ABSTRACT:

In this project we have to control the water level dam.First check the Water level condition if the water level is high then motor will off ie DAM gates will be opend in high condition (the soil sensor probes are short condition).The motor is in OFF condition. If the water level is low condition (the probes are not connect each other) here the motor is ON and it also depends upon the water level sensor conditions the total condition fully depends up on arm7(lpc2148) for door opening and closing motor has to rotate bi directional by using L293d driver Ic. **keywords**: L293d, Water Level Sensor, Arm7, Motor.

INTRODUCTION:

Automatic water pump controller is a series of functions to control the Automatic Water Pump Controller Circuit in a reservoir or water storage. The water level sensor is made with a metal plate mounted on the reservoir or water tank, with a sensor in the short to create the top level and a detection sensor for detecting long again made for the lower level and ground lines connected to the bottom of reservoirs or reservoir. In everyday life, there must be some physical elements that need to be controlled in order for them to perform their expected be haviours. A control system therefore can be defined as a device, or set of devices, that manages, commands, directs or regulates the be heavier of other device(s) or system(s). Consequently, automatic controlling involves designing a control system to function with minimal or no human interference. Intelligent systems are being used in a wide range of fields including from medical sciences to financial sciences, education, law, and so on. Several of them are embedded in the design of everyday devices. This paper at presenting our project in embedding a control system into an automatic water pump controller. One of the motivations for this research was the need to bring a solution to the problem of water shortage in various places eliminating the major culprit; waste of water during pumping and dispensing into overhead thanks. We believe that creating a barrier to wastage will not only provide more financial gains and energy saving, but will also help the environment and water cycle which in turn ensures that we save water for our future.

BLOCK DIAGRAM:

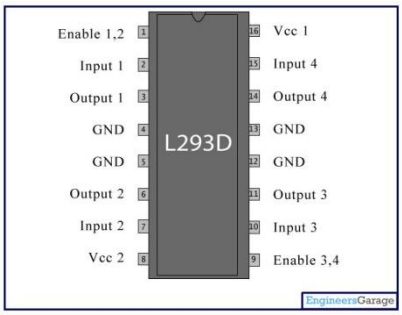


MOTOR DRIVER (L293D):

L293D is a dual H-bridge motor driver integrated circuit (IC). Motor drivers act as current amplifiers since they take a low-current control signal and provide a higher-current signal. This higher current signal is used to drive the motors.L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction. The motor operations of two motors can be controlled by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and

anticlockwise directions, respectively. Enable pins 1 and 9 (corresponding to the two motors) must be high for motors to start operating. When an enable input is high, the associated driver gets enabled. As a result, the outputs become active and work in phase with their inputs. Similarly, when the enable input is low, that driver is disabled, and their outputs are off and in the high-impedance state.

PIN DIAGRAM:



WATER LEVEL SENSOR:

Water Level Sensor submersible pressure transducer consists of a solid state pressure sensor encapsulated in submersible stainless steel 13/16" diameter housing. The water level gauge uses a marine grade cable to connect the water pressure sensor to the monitoring device. Each of Global Water's pressure transducers has a two-wire 4-20 mA high level output, five full scales ranges, and is fully temperature and barometric pressure compensated.

FEATURES:

- High accuracy and reliability
- Completely submersible sensor and cable
- Compact, rugged design for easy installation
- Minimal maintenance and care
- Sensor compatible with most monitoring equipment
- 4-20mA output
- Vented cable for automatic barometric compensation
- Multiple ranges available from 3' to 250'
- Wet-wet sensor eliminates vent tube concerns
- Dynamic temperaturecompensation system
- Not affected by foam, wind or rain
- Monitors levels in groundwater wells, rivers, streams, tanks, lift stations and open channels

The water level sensor having three levels

- Low level
- Medium level
- High level

If the water level sensor is in below the threshold level i.e below the low level the motor is in OFF condition. If the water level sensor is in (low or medium or high) levels the motor is in ON condition

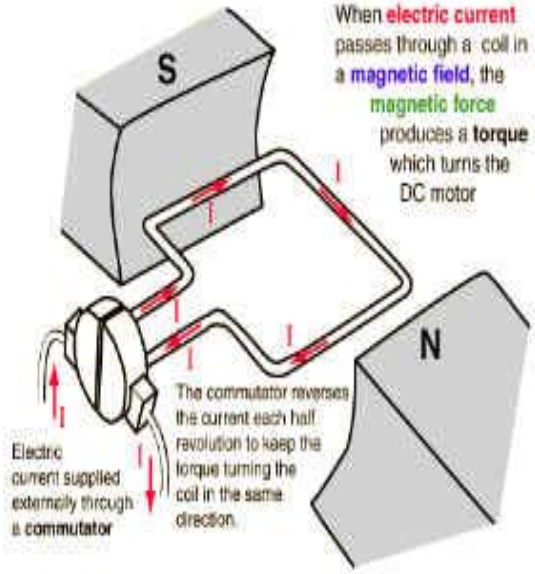
DC MOTORS:

A DC motor is designed to run on DC electric power. Two examples of pure DC designs are Michael Faraday's homopolar motor (which is uncommon), and the ball bearin motor, which is (so far) a novelty. By far the most common DC motor types are the brushed and brushless types, which use internal and external commutation respectively to create an oscillating AC current from the DC source -- so they are not purely DC machines in a strict sense.

A DC motor is any of a class of electrical machines that converts direct current electrical power into mechanical power. The most common types rely

on the forces produced by magnetic fields. Nearly all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of current flow in part of the motor. Most types produce rotary motion; a linear motor directly produces force and motion in a straight line.

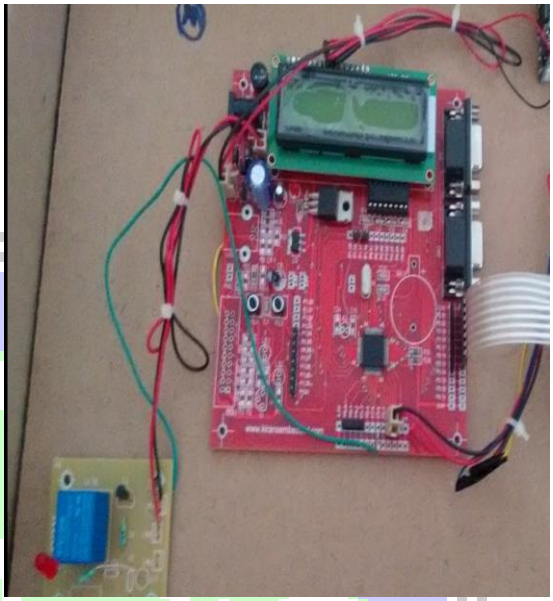
DC motors were the first type widely used, since they could be powered from existing direct-current lighting power distribution systems. A DC motor's speed can be controlled over a wide range, using either a variable supply voltage or by changing the strength of current in its field windings. Small DC motors are used in tools, toys, and appliances. The universal motor can operate on direct current but is a lightweight motor used for portable power tools and appliances. Larger DC motors are used in propulsion of electric vehicles, elevator and hoists, or in drives for steel rolling mills. The advent of power electronics has made replacement of DC motors with AC motors possible in many applications.



TYPES OF DCMOTORS:

1. Brushed DC Motors
2. Brushless DC motors
3. Coreless DC motors

RESULTS:



CONCLUTION:

Water is one of the most important basic needs for all living beings. But unfortunately a huge amount of water is being wasted by uncontrolled use. Some other automated water level dam controlling system system is also offered so far but most of the method has some shortness in practice. We tried to overcome these problems and implemented an efficient automated water level dam controlling system. Our intension of this research work was to establish a flexible, economical and easy configurable system which can solve our water losing problem. We have been used a lpc2148 microcontroller in this system which is the key point to reduce cost. We have successfully experiment the system in lab and therefore proposed a bi direction based water level moter and controlling .

REFERENCES:

[1].Islam, N.S. Wasi-ur-Rahman, M. Anintelligent SMS-based remote Water Metering System. 12th International Conference on Computers and Information Technology, 2009, 21-23 Dec. 2009, Dhaka, Bangladesh.

[2].Mohd Helmy Abd Wahab , Siti Zarina Mohd Muji, Fazliza Md. Nazir. Integrated Billing System through GSM Network. In Proceeding of 3rdInternational Conference on Robotics, Vision, Information and Signal Processing 2007 (ROVISP2007), Penang, 28 – 30 November 2007

[3]. Mohd Helmy Abd Wahab, Azhar Ismail, Ayob Johari and Herdawatie Abdul Kadir. SMS-Based Electrical Meter Reading. In Proceeding of International Conference on Rural Information and Communication Technology 2009 (r-ICT), 17 – 18 June 2009, Bandung, Indonesia

[4]. Taha Landolsi, A. R. Al-Ali, Tarik Ozkul, and Mohammad A. Al-Rousan. Wireless Distributed Load-Shedding Management System for Non-Emergency Cases. International Journal of Electrical and Electronics Engineering 4:7 2010. pp. 453 – 460.

[5]. Malik Sikandar Hayat Khiyal, Aihab Khan, and Erum Shehzadi." SMS Based Wireless Home Appliance Control System (HACS) for Automating Appliances and Security", Issues in Informing Science and Information Technology. Vol. 9. pp. 887 – 894. 2009.

[6].Al-Ali, A.R. Rousan, M.A. Mohandes, M. "GSM-Based Wireless Home Appliances Monitoring & Control System", Proceedings of International Conference on Information and Communication Technologies: From Theory to Applications, pp 237-238, 2004.Ayob Johari et al, / (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 2 (3) , 2011, 1114-11201119

[7]. Lawrence Harte, Richard Levine and Geoff Livingston, "GSM Super home", McGraw-Hill, 1999.

[8]. Shao-Quan Lu,"A Circuit for Water Level Detection and Control", HOLTEK, White paper

[9]. Martin Bates, " Interfacing PIC Microcontrollers ; Embedded Design by Interactive Solution", New

[10]. Dogan Ibrahim, " PIC BASIC; Programming and Projects", New, 2001