

ATMOSPHERIC WATER GENERATOR

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ABSTRACT

The atmospheric generator is a device that uses condensation era, which extracts water from humidity by air. The final result is to consume natural water in Air. The atmospheric water generator works according to use of compressors that exceeds the copper coil through this air gauze is reducing the temperature to the dew point. The air is condensed into liquid and is stored in the tank by exceeding the filter gadget. Our company's intended purpose or purpose can provide safe and smooth water consumption in the field of local areas that can pass through the tribal issue of water, or pass award transportation pathways. Many people in the world do not have access to clean fresh water. What's more, drought is hitting many parts of the world, destroying crops and pushing societies to the brink of collapse. Our project is working to solve the problem of water scarcity. Since there is a huge amount of water vapor in a humid atmosphere, it is necessary to design a system to extract and collect atmospheric water. We are designing this innovative, simple and affordable Atmospheric water generator. And from this we are generating electricity. This water generator can be used at home to provide people with fresh water or for irrigation on farms.

Keywords: Condensation Era, Irrigation.

I. INTRODUCTION

The Atmosphere carries water withinside the shape of water vapor, moisture etc. This device is able to changing atmospheric moisture into useable or even drinking water. The device makes use of the principle of latent heat to transform water vapor molecules into water droplets. This includes a going for walks a condenser that is used to create the surroundings of water condensing temperature or dew point, certainly traditional compressor and evaporator gadget can also be used to condense water through actually changing the latent heat of coolant in the evaporator. The condensed water can be amassed to apply for drinking cause and numerous different makes use . In this regard, our group can be running on in growing a water will condense the suspended water molecules (humidity) from the surroundings into liquid section water. And in our project, we are also generating electricity from stored water in tank which is installed at high head and generator is installed below, then water flows though below turbine and electricity will be generated.

II. METHODOLOGY

A cooling condensation type AWG uses a compressor to circulate refrigerant through a condenser and then an evaporator coil that cools the surrounding air. Once the air temperature reaches its dew point, water condenses into the collector. An atmospheric water generator (AWG) is a device that extracts water from humid ambient air, producing potable water. Water vapor in the air can be extracted by multiple techniques, including condensation - cooling the air below its dew point, exposing the air to desiccants, or pressurizing the air.

Block Diagram

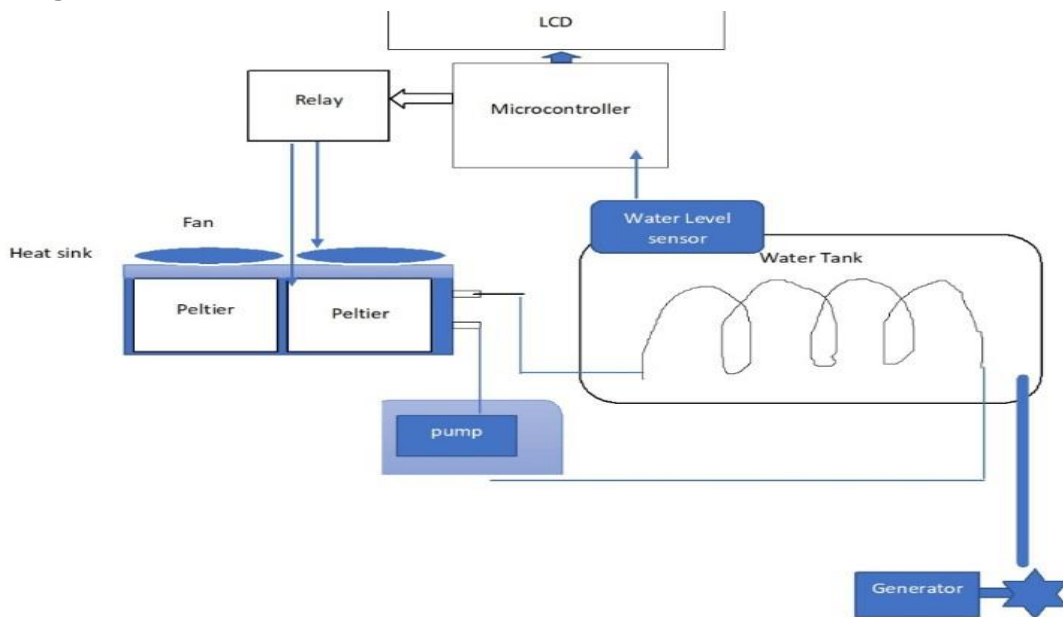


Figure 1: Block Diagram

Operation -

As the operating precept of Atmospheric Water Generator(AWG) is primarily based totally at the Dehumidifier to extract water from moist air .As proven in fig A dehumidifiers sucks in air fom one end , takes the moisture out of it after which blows it returned out again. The Moisture drips into tank . Similarly water vapour withinside the air is condensed through cooling the air under its dew point , exposing the air to desiccants , or pressurizing the air in AWG.. Water production rate is enormously depedent upon the air temperature and the quantity of water vapor i.e., humidity withinside the air. The maximum generally used AWG structures appoint condenser and cooling coil era to tug moisture from the air withinside the identical manner a family dehumidifier does. Now as proven in fig B we save the water in tank as generated from above system. The tank which is hooked up at excessive head and generator is hooked up under excessive storied constructing then water flows alevn though under turbine and power can be generated. Also we can use pump from forcing water right all the way down to turbiner.

Component Details

Entire system has following major components. Here we will see individual components in brief & its role in system.

1. SMPS :

A switched-mode power supply (SMPS) can be understood as an electronic circuit converting power with switching devices that turn on and off at high frequencies. They are also storage component like inductors or capacitors that supplies power when the switching as at its non-conduction state.



2. DC Water Pump :

In a cooling atmospheric water generator, a compressor circulates refrigerant through a condenser and then an evaporator coil which cools the air surrounding it.

**3. Peltier filter device :**

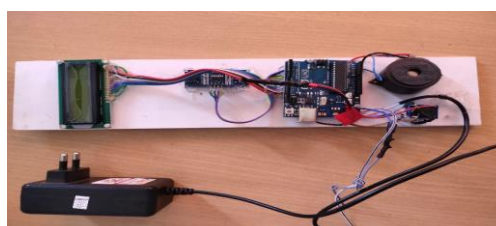
The atmospheric water generator using peltier effect is a device used to generate the water from the humid air. In our atmosphere much amount of humid air is available it contains large amount of water this amount of water can be used by implementing a device like Atmospheric Water Generator.

**4. Copper Coil :**

The Copper coil is used in Atmospheric Water Generator is to circulate the cold water from peltier filter device.

**5. Arduino :**

The ultrasonic sensor (or transducer) works on the same principles as a radar system. An ultrasonic sensor can convert electrical energy into acoustic waves and vice versa. The acoustic wave signal is an ultrasonic wave traveling at a frequency above 18kHz. The famous HC SR04 ultrasonic sensor generates ultrasonic waves at 40kHz frequency.

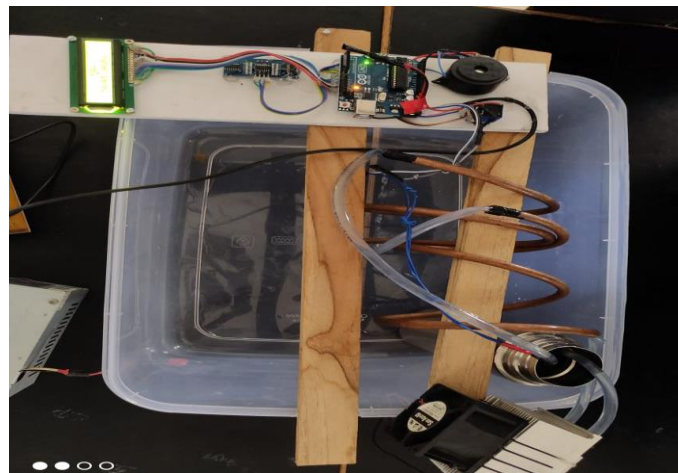


Application -

AWG generators range from home-based units that can produce 1 to 20 liters of water. The Atmospheric Water Generator is the gadget which can be executed for outrageous circumstance, to use during flood, in Desert regions, and in provincial regions. It enjoys incredible benefits as it works like an inexhaustible wellspring of climate water and Doesn't require a weighty power source. so this type of gadget can be used in homegrown reason. And this is again a renewable source of electricity generation. It tends to be carried out for Industrial improvement where the water involves Crisis.

III. RESULTS AND DISCUSSION

Despite widespread water pollution & shortages of drinking water, there is an abundance of water around us from the air that we breathe it doesn't matter where you are even in deserts.

IV. PHOTOGRAPHS**V. CONCLUSION**

Despite widespread water pollution & shortages of drinking water, there is an abundance of water around us from the air that we breathe it doesn't matter where you are even in deserts. Water harvesting & treatment technologies that are solar or wind powered is the most environmentally friendly way to extract pure quality water from the air or sea at low cost.

VI. REFERENCES

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