

Automatic Water Distribution System Using Ultrasonic Flow Meter

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Abstract

This paper proposes a technique for measurement of liquid flow using Ultrasonic Flow Meter (UFM) ASIONIC 400W is designed to measure the velocity of a fluid in a sealed pipeline fitted with transducer. This enables calculation of flow and volume based on time of flight principle.

ASIONIC 400W is a static water meter which has no moving parts to avoid wear and tear.

ASIONIC 400W is an integral and hermetically closed static water meter intended for the registration of cold and hot water consumption.

1. INTRODUCTION

The water is one of the most important life cycle element in the human being. Now a day we can faces the biggest problem of the shortest of water. In some application required excessive use of the water & they can use that amount of water. But they are not pay that much amount of as per the utilized water to the corporation or government.

We can design the automatic water distribution system that can distribute the water according to the consumer need we can distribute the water by using automatic water

distribution system with LCD display and app designed for water distribution system is record the data of the customer consumption and generate the bill of customer consumption. Pipe which is received by the receiving transducer. Flow meter measures time taken by ultrasonic signal to travel across the pipe in forward and reverse direction. When the signal travels along the direction of the flow, it travels more quickly compare to the condition of no flow. On the other hand, when the signal travels against the direction of flow, it slows down. The difference between the “transit times” of the two signals is proportional to flow rate.

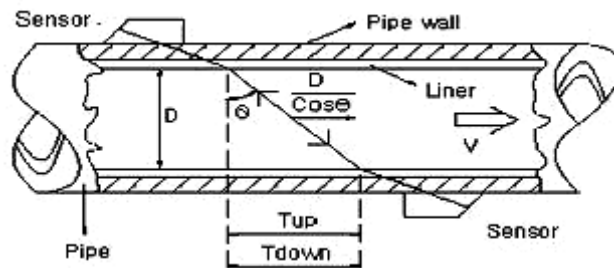
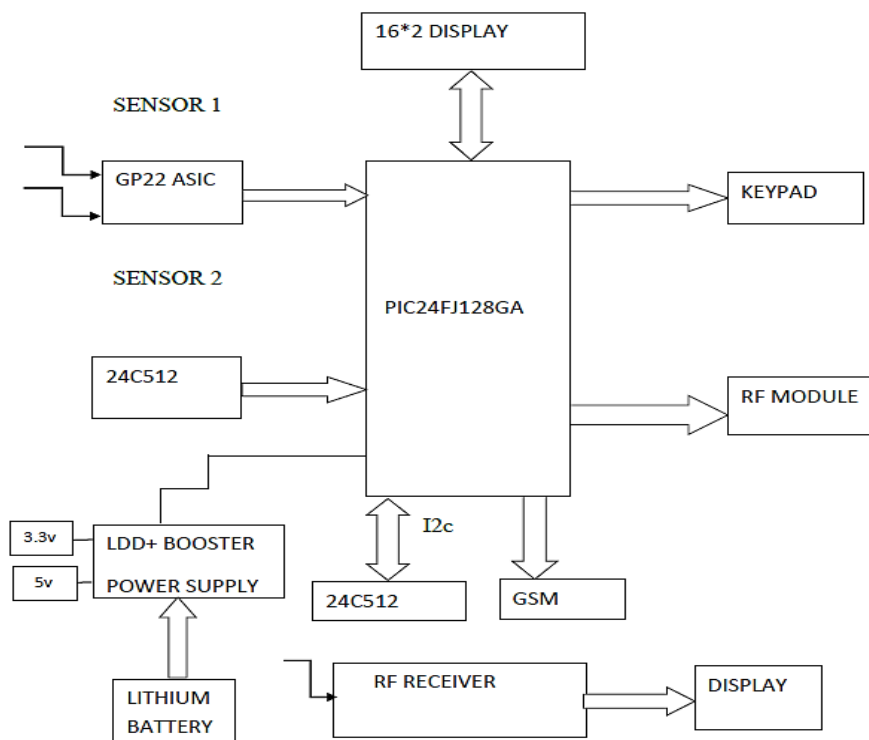


Fig.1 Ultrasonic flow meter

2. BLOCK DIAGRAM



2.2.1 GP 22:

TDC-GP22 is a 2-channel TDC with additional analog elements like extended fire-pulse generator, zero-cross detection and analog switches for simplifying the use in ultrasonic flow meter applications. The addition first-hit detection makes TDC-GP22 suitable for high dynamic applications as ultrasonic water meters. An optimized power management of the various units brings down the operating current to a few μA at 2 Hz measuring rate.

2.2.2 24C512:

The AT24C512 provides 524,288 bits of serial electrically erasable and programmable read only memory (EEPROM) organized as 65,536 words of 8 bits each. The device's cascade feature allows up to four devices to share a common two-wire bus. The device is optimized for use in many industrial and commercial applications where low power and low-voltage operation are essential. The devices are available in space saving 8-pin PDIP, 8-lead EIAJ SOIC, 8-lead JEDEC SOIC, 8-lead TSSOP, 8-lead Leadless Array (LAP), and 8-lead SAP packages.

In addition, the entire family is available in 2.7V (2.7V to 5.5V) and 1.8V (1.8V to 3.6V) versions.

2.2.3 RF MODULE:

An RF module (radio frequency module) is a (usually) small electronic device used to transmit and/or receive radio signals between two devices. In an embedded system it is often desirable to communicate with another device wirelessly. This wireless communication may be accomplished through optical communication or through radio frequency (RF) communication. For many applications the medium of choice is RF since it does not require line of sight. RF communications incorporate a transmitter or receiver.

3. CONCLUSIONS:

UFM which calculate amount of water consumption and send message signal to user. This system has greater scope in feature and current condition for saving and proper use of water.

4. ACKNOWLEDGEMENTS:

We have great pleasure in presenting our paper titled, "Automatic Water Distribution System Using Ultrasonic Flow Meter" Inspiration and guidance are invaluable in every aspect of the life, especially in the field of the academics, which I have received

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