Efficient Water Distribution System

Submitted by :-

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For use in residential townships & apartments

Working of Efficient water distribution system

- Regulate water supply
- Leakage detection

Regulate water supply

- Regulating water supply in a township , requires one primary console , from where the water is pumped to various outlets .

A water flow regulator has been
installed at the point where the water is
Stored and to be supplied at all of the
Houses / outlets

It is then connected to a master console
To start / stop or to regulate the water
Flow at desired points.

Wireless Remote Water Meter and Management System

The system applies the technology of wireless communication, sensor, automatic control, IC card to water meter reading, real time monitoring and charge management, which realizes short, medium and long distance wireless remote meter reading. It not only brings convenience to the management department, reduces the operation cost, but also completely solves the difficulties of visiting meter reading, monitoring and charge which the traditional management method can not do.

The system is composed of wireless remote reading (AMR) water meter equipped with a wireless data collector, wireless data concentrator, vehicle-load collector（PDA or MODEM）, GPRS base station or PDA, IC card, data host computer, etc. It adopts the star network structure with powerful functions and good expandability capability.

Wireless Remote Water Meter and Management System

1. Real time meter reading & control function: real time monitors the state of water meter, records or monitors all the data and information automatically and transmits control orders.

2. Encryption function: automatically identifies the collected signals, prevents vicious attacks in the signal path.

3. Data setting function: the data transmitting time, water price and step prices can be set flexibly.

4. Data reserve function: automatic human-less operation mode gathers various kinds of management data; the data will not be lost and can be reserved for 10 years.

5. Network function: connects with call-center smoothly and also links with bank system to realize self-help fee payment.

Water meter console installed at every outlet / house / apartment

Water meter features

1.On principle of rotary piston metering

2.High sensitivity, can count to the minimum low flow rate of 1L/h, high accuracy, .

3.Optimum materials used on moving parts, stable performance, long service life

4.Meter casing is made of stainless steel or PPO materials, elegant and graceful

5.Electronics control parts perform highly reliably, stably; Low power consumption; Intermittent work, data protection without electricity. Protection ensures the unique and accurate measurement.

6.Computer simulation of naked view, direct reading, independent from counting, single counting value transmitting.

7.Different network organizations as the following:

 a.Control local area network

 b.Public switched telephone network

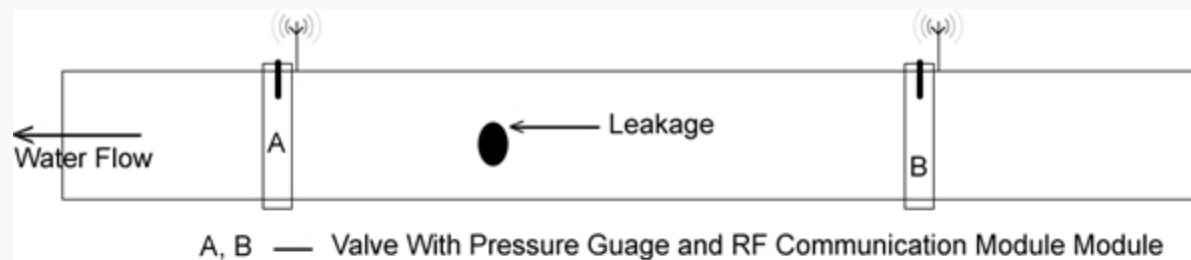 c.GSM/CDMA mobile short message service

Water Regulation

- Through Flow and Water meters , water supply can be On/Off and regulated at any time and can be Pre-fixed also according to the needs and water availability.

- Also a combined and unique water consumption report can be generated on daily / weekly & monthly basis of the whole township and also of per unit / house.

Leakage Detection

- With EWDS systems implicated at townships we can detect and stop leaks within 3 seconds .

- The working is based on the revolutionary , wireless Zigbee technology , which monitors water flow , and any interruption in normal water flow is sensed and "RF" signals send to the central console.

Leakage Detection

■ Leak detection logger with remote alarm via SMS

■ EWDS uses a acoustic logger with a remote alarm facility to host PC or to a mobile phone. It is designed for use in detecting and localizing leakage on water distribution systems.

■ EWDS automatically determines the presence of a leak. It also gives visual indication of the leak noise strength and a leakage confidence factor.

Water Flow ← Leakage

A, B — Valve With Pressure Guage and RF Communication Module Module

Zigbee Technology

To prevent water leak , the use of centralized alarming system consisting of several water leak detectors can be placed in targeted areas. However, the installation costs for these types of alarming systems are high, especially in already finished buildings since they require a lot of wiring for handling of the alarming system. To solve this problem water leak detectors that use the ZigBee technology to communicate with a control center have been studied and developed in this work. Thanks to the wireless connection, the sensor is easy to place in any area where water leak detection is desired. The wireless water detector system in the ZigBee network has a very high reliability and a long battery lifetime of 10 years.

24 hrs , 365 days supply of water depends on proper distribution and management

Every single liter of water can be tracked and used as per the needs

With EWDS , water efficiency can be increased to 90% , compared to 45%**

For Further Details

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