The wireless communication solution of Intelligent agriculture

CWDN wireless irrigation system

DVER 1.3

With the development of the society and the needs of the production, in order to improve the traditional irrigation methods and the quality of crops growth environment, to reduce labor costs,as well as improve the utilization efficiency of water resources,Our company introduces a kind of management solution ,which according to the environmental information accurate irrigation, with low cost, low power consumption, high efficiency---**“CWDN”**（**Cellular+wireless+Digital+Net:Cellular wireless data network**）Intelligent network irrigation system, the system can realize intelligent, accurate irrigation, reduce the waste of water resources so that improve the economic benefit according to the accurate irrigation, crop of soil moisture and air temperature.

Intelligent irrigation system - Frame diagram

This system follows the following design principles:

1.In order to improve the efficiency and increase the maintainability, this system adopts the modular and hierarchical design.

2. Flexible hardware configuration.The users can upgrade and change the controlled hardware equipment according to your choice , rather than change the software;

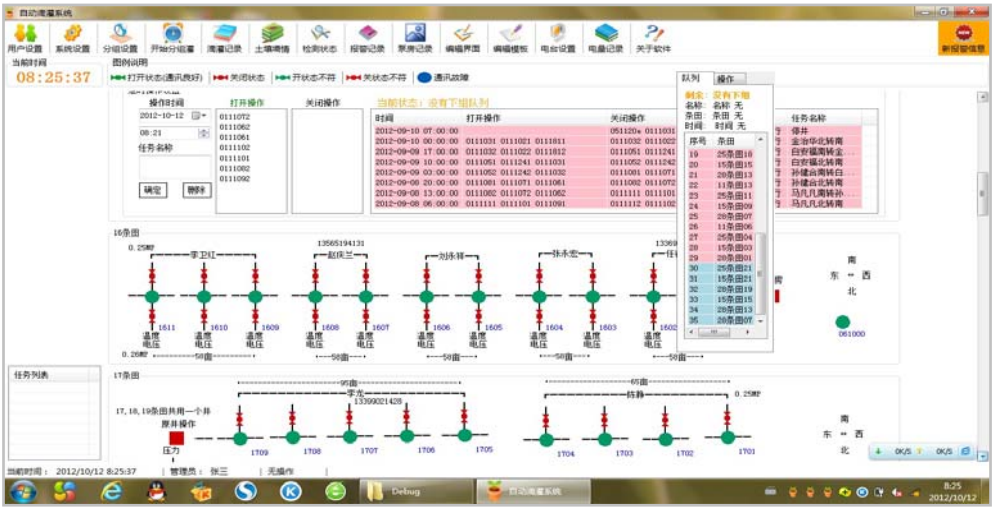
3. Friendly man-machine interface.It realized the irrigation process without labor, i.e.,by reducing the working strength of staffs, to improve the efficiency of irrigation;

4. The system has a strong ability to resist electromagnetic interference, to ensure that system can work reliably even if under the harsh field environment of strong electromagnetic interference.

5. With the automatic detection fault function,.It can improve the robustness of the system.

Intelligent irrigation system - Components

Upper computer Control system:Installed in the control room’s computer

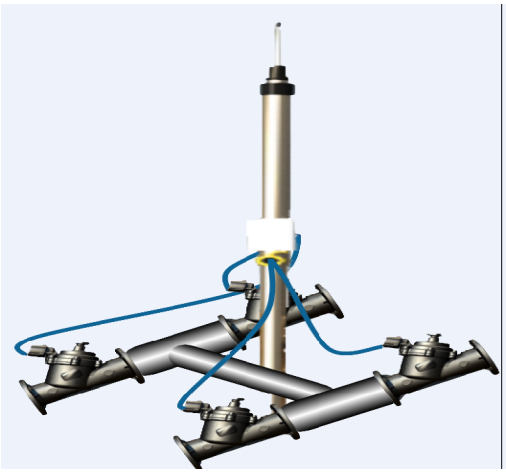


Center (coordinator):By connecting between 232bus and computer.Upper computer Control system can communicate with the center by 232bus.

The pump room controller:Installed in the pump room.The wireless module in the pump room controller is medium-power,which transmission distance in 2000 meters.Pump controller will always in working condition.Its mainly tasks are including control the equipment in the pump room, relay signals, and hibernation and wake up the bench border controller.

Pump Room controller

The bench border controller:It installs in the field, and power supplied by battery, the wireless module in the bench border controller is small-power with the transmission distance in 500 meters.Bench border controller will always in dormant condition with the current less than 5 uA.



Controlled equipment (valve) + sensors:It will install in the field,which a lways in outage condition,controlled by the bench border controller.