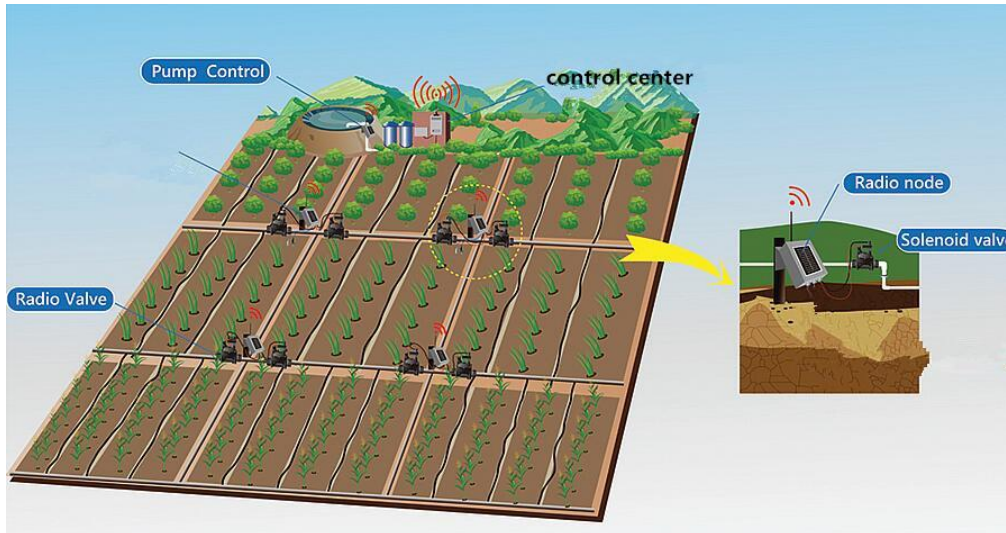


Wireless Irrigation Control System

General introduction:

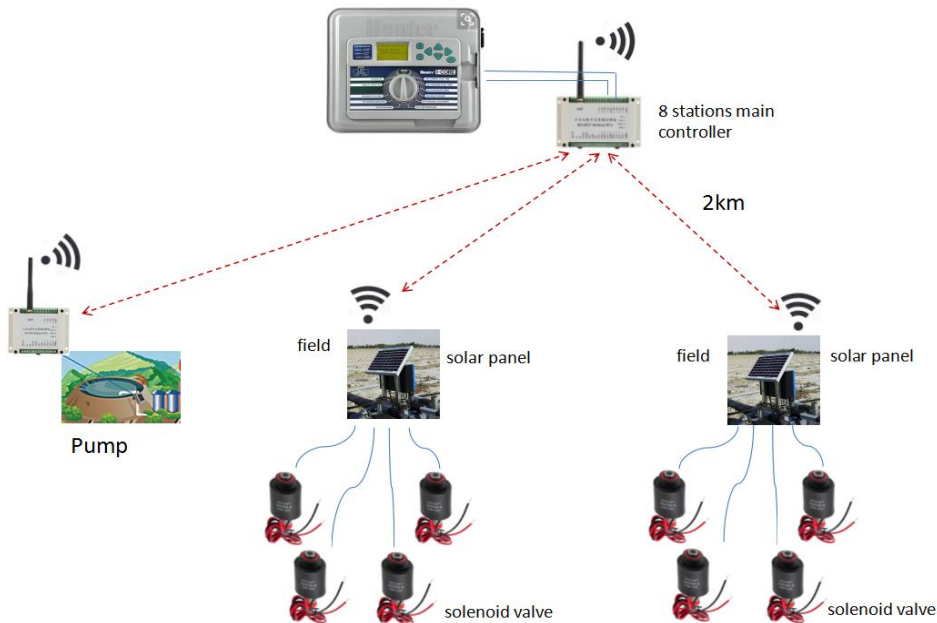
Automated irrigation becomes a trend with the development of smart agriculture. In order to send appropriate amount water in proper time to your farmland, we design this wireless irrigation system. It will help you Start/OFF your solenoid valves on site wirelessly. Users can control different valves on site at the control center easily. No need to go field, run here and there to control each valves manually one by one. This wireless control system will really help you save a lot of time.



System includes

1. Master controller at Control center--to connect Hunter/Toro irrigation controller
2. Pump controller at pump station--to control pump ON/OFF
3. Solenoid valve controller at field--each controller connects 4pcs DC type solenoid valves

Wireless irrigation controller



Features

1. Base station expandable

The main controller has 8 inputs. We also provide 8-station expander in order to connect 16 or 24 or 36 or 48 stations irrigation controller.

2. Valve controller support solar power supply

Field valve controller has 4 ports to connect 4 latching valves. Valve controller can use solar power supply. It already has built-in solar charge circuit on board.

3. Pump ON-OFF automatically

Our pump controller turns pump on automatically if any one of the solenoid valves is ON. And switch off the pump automatically if no valve is ON.

4. Base station automatically controls valves

You can automatically switch on any solenoid valve according your scheduled irrigation controller's program.

5. Wireless connection

No need to operate pump and valve manually. You could do all these in control room. No need to run here and there anymore. Save time and energy.

6. Can check feedback from flow sensor (customize)

According flow sensor's analog input data to check each connected valve's condition. If you need this function, please confirm before ordering.

7. Control distance around 1-5km at open area, no communication fee.

Benefits

1. Lower labor costs

2. Increase accuracy

3. Reduce water use

4. Irrigating multiple, large, and/or remote properties can be very labor intensive. In addition, it is often difficult to know exactly when (or if) valves were activated, and whether or not the desired duration or amount of water distribution was achieved. Furthermore, in instances where immediate response is required, manual valve activation may not be an option.

Parameter

1. Master-Main controller:

24V DC power supply

8 isolated inputs (24V AC or 24V DC), 1 relay output

Can expand in 8-station

433MHz, 1W power output

2. Master-Expander

24V DC power supply

8 isolated inputs (24V AC or 24V DC), no output

3. Pump controller:

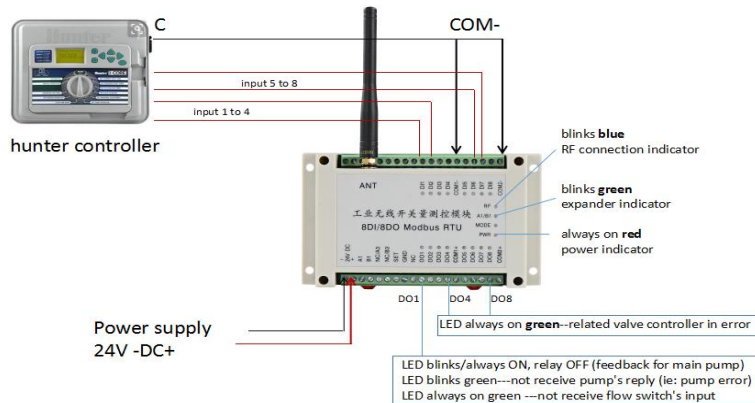
Power supply: 12V DC
 1 digital dry input and 1 relay output
 contact max load AC250V/5A, DC30V/5A
 433MHz, 1W power output

4. Valve controller:

It is designed to control 9-36V DC type latching valve (pulse output type solenoid valve)
 12V DC switching power supply or **solar panel + lithium battery** power supply. **Battery type:** 3S
 Lithium Ion battery, full of power 12.6V.
 4 isolated pulse outputs, can control 4 solenoid valves (9-36V DC) separately
 433MHz, 1W power output
 Power consumption: 40mA

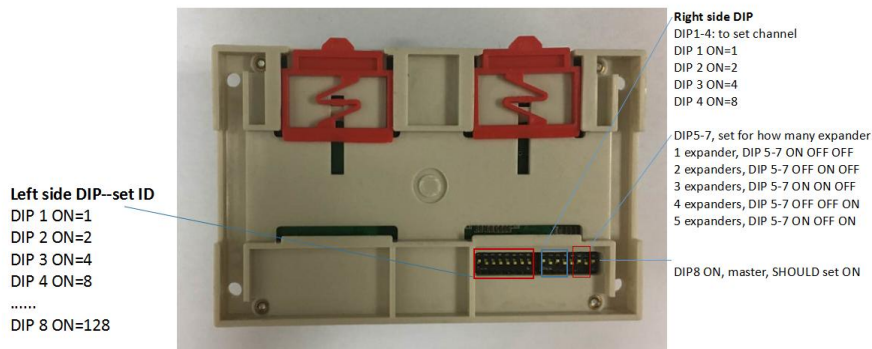
How to connect master controller

Master controller



About main controller's DIP switch definition

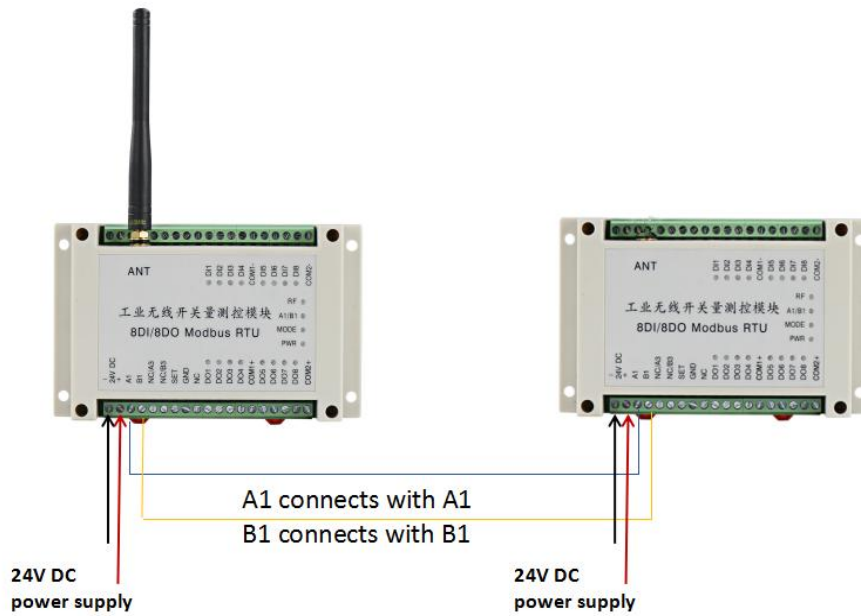
Master controller---DIP switch



This DIP setting means ID 1, channel 5, there are 2 expanders, master module

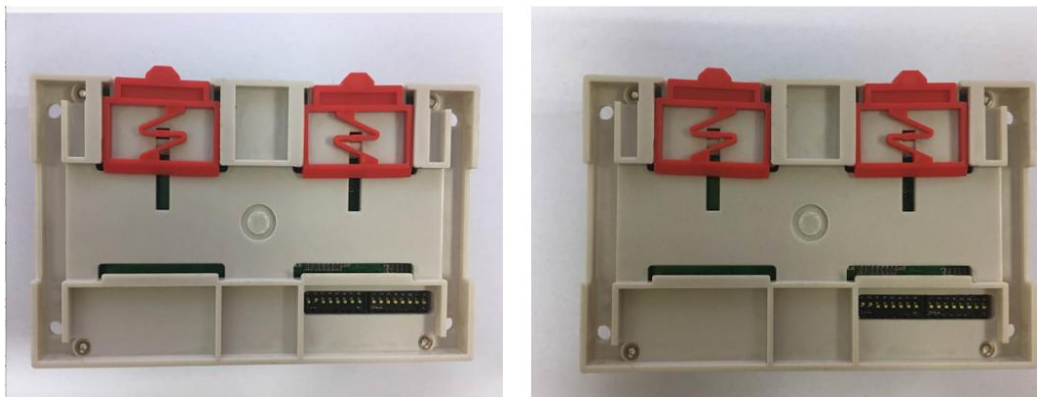
How to connect expander

How to Connect Expander



About Expander's DIP switch definition

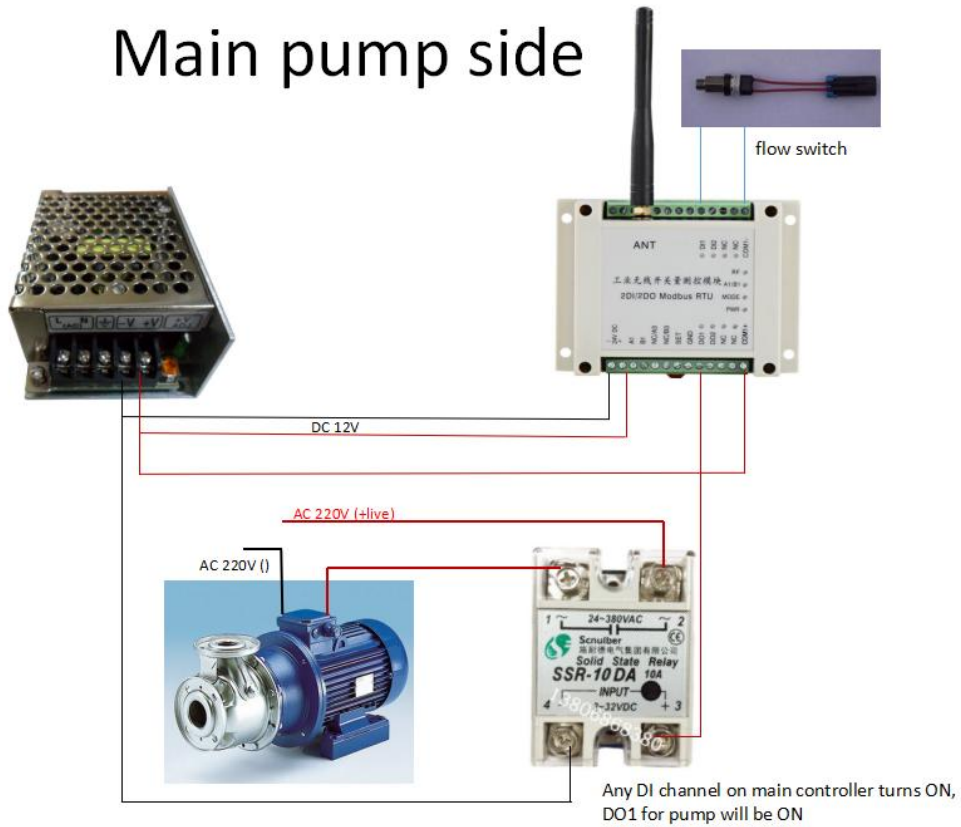
Expander---DIP switch setting



Expander 1: main module's ID+1, right side DIP all set OFF,
 Expander 2: main module's ID+2, right side DIP all set OFF
 ie: main module is ID 1, then please set expander 1 with ID2, expander 3 with ID3

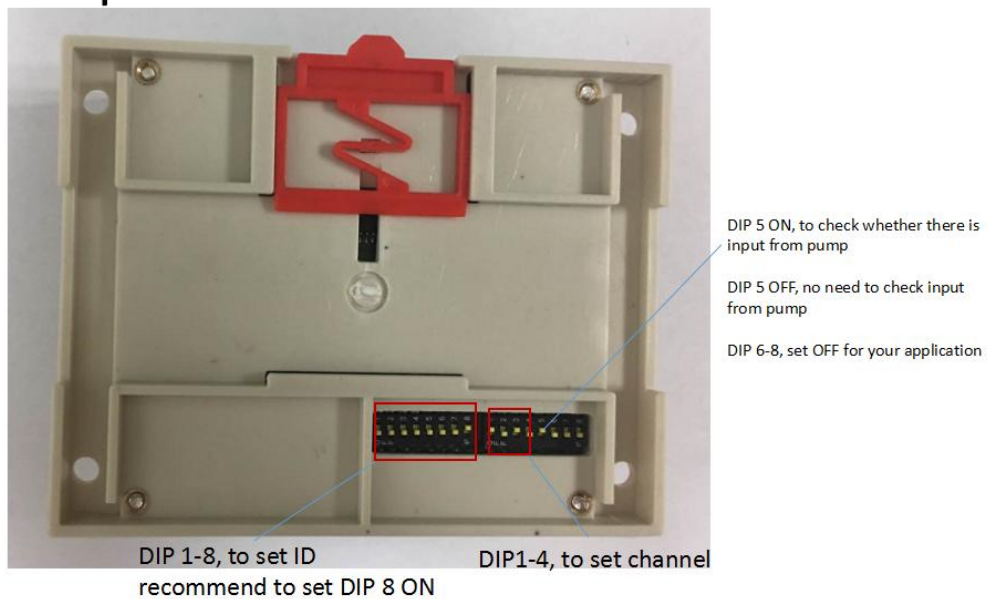
How to connect main pump

Main pump side



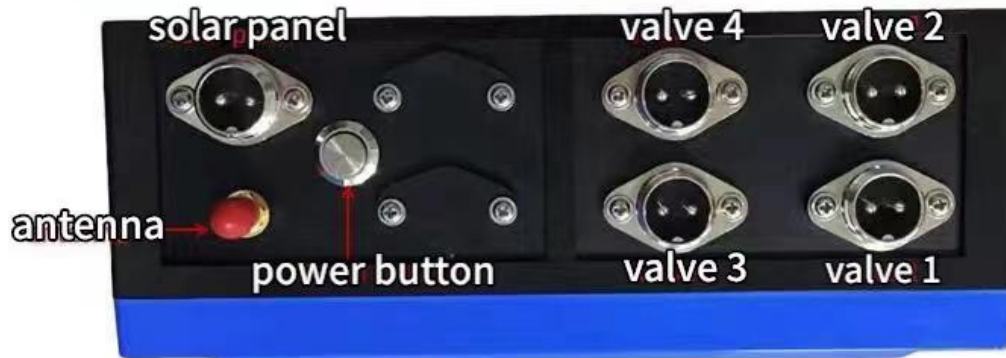
Pump controller DIP switch definition

Pump Controller---DIP switch



How to connect valve controller

For all pins, pin1 is positive+, pin2 is negative-



Conclusion:

1. Please make sure all controllers in the same system setting with the same channel
2. One master to more slaves, please set different ID for slaves(valve controller)
3. Master side all COM- ports connect with your irrigation controller's C port

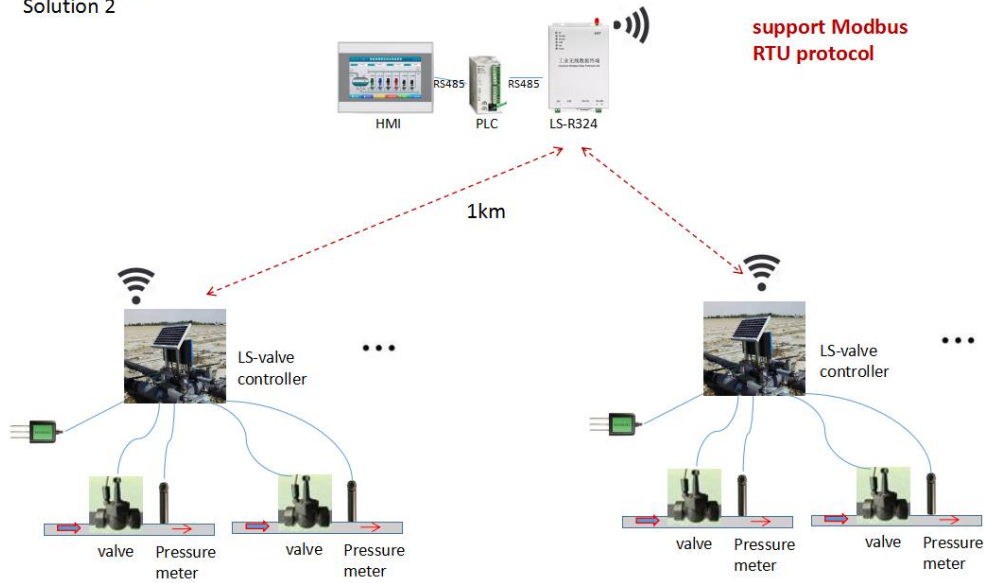
Customize function:

If you want the valve controller to connect flow switch or soil sensor, pressure sensor ect, please let us know, we can add 3 analog inputs for this valve controller board.

Solution 2 Application example

If you have program knowledge, you could use your own main controller like PLC, HMI or PC as master to control latching valves by wireless, too. In control room, you just need to connect one wireless DTU LS-R324. It has RS232, RS485, USB interface. Field side, just use our wireless valve controller. LS-R324 can do wireless communication with LS-SVC04 valve controllers. We support Modbus RTU protocol.

Wireless Irrigation
Solution 2



Solution 2, please refer the following register information.

There are two types register

Register type	number	Read command	Write command	Power down	function
Holding register		0x03	0x06 single 0x10 multipal	Not record	The condition that can read and set

parameter	Register address (HEX)	Type	Modbus Function code	Range and remarks	Default value
Digital input	0x00B0	UINT16 read only	3/4	Bit0: CH1 water flow switch Bit1: CH2 water flow switch	N/A
Analog input AI1	0x00B2	UINT16 read only	3/4	0-20mA corresponds to 0-32767	N/A
Analog input AI2	0x00B3	UINT16 read only	3/4	0-20mA corresponds to 0-32767	N/A
Solenoid Latching Valve	0x00C2	UINT16 read and write	3/6	Bit 0 corresponds to latching valve 1 Bit 1 corresponds to latching valve 2 Bit 2 corresponds to latching valve 3 Bit 3 corresponds to latching valve 4	N/A

UINT16: 16-bit unsigned integer register