Version： A1

4 Zone 4 Valve Solar Powered Auto Irrigation System
GG-004C

Manual

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Contents

1. Introduction

GG-004C irrigation controller is both a moisture sensor based and timer based irrigation controller, It will operate up to 4 valves, and is solar powered. Being solar powered, there is no need of a power line, which reduces setup cost and time, and is environment friendly.
GG-004C has “Moisture control” and “Timer control”, it is easy to switch between these two modes, is great for big gardens with not enough water pressure to irrigate all at once, or for several blocks of an agricultural field, or golf courses.

2. Operating Principle

Using the “Moisture Control” mode, the controller will monitor the sensor installed at zone 1 to control the valve of zone 1. The supplied moisture sensor collects soil samples periodically (Every 5 minutes) from zone 1; the controller does analysis and decides to open or close the valve in zone 1. When the soil reaches the user preset dry control level the system begins to irrigate the first zone, when the soil reaches the user preset wet level, the controller records the length of the irrigation time, turns off the irrigation to zone 1, and repeats the same irrigation length for the second, third and forth zones. This way the system will reduce setup cost and optimize irrigation.
In “Timer” mode, the user can setup up to 4 valves, which can run at their own different schedules. The moisture sensor will be used as a rain sensor. User sets up wet control level, as rain makes soil moisture reach this level the controller will turn off irrigation if it is on, there is no irrigation to avoid waste.

3. Specifications

General

Power supply: Solar panel 17.4V DC, 220mA, 3.8W
Back up battery: 12V, 2.3Ah NMH battery
Control box size: 28cmx17.5x28.2cm
Magnetic valve: 4 valves, 3 kinds of valves
DC latching valve (4-12V), control pulse width 200 ms, Working pressure: 0.14-1.5Mpa

DC 12VDC valve, initial current 800mA, holding current 300mA, Working pressure: 0.14-1.5Mpa

Relay switch contact closure: less than 24V DC valve, maximum current 2A.

Operating Power:

Controller idle current ≤ 2mA (No LCD backlight, moisture sensor not operating, no irrigation.

Moisture sensor operating current ≤ 50mA

Moisture Sensor Scan cycle: Moisture sensor/Rain sensor, every 5 minutes.

Operating temperature range: -10～55℃

Weatherproofing: IEC 60529 Class 56

Features

Can switch using either "Moisture Control" or "Timer Control" mode.

Solar powered, low carbon green power, great for outdoor applications.

Controls opening/closing of up to 4 valves. For big garden or cultivated area with not enough water pressure for irrigating all at once, limited distribution capacity, or to save setup cost.

User can choose following valves: Latching valve, 12V DC valve, or relay switch closure with less than 24V DC and with external power supply. All valves must be the same type

LCD has backlight for viewing, turns on automatically on power on or any button push, display scrolls, shows data for 5 seconds for each page, stays lighted for one minute.

Can manually open/close valves for emergency.

Can wire one 12V DC relay to control one pump.

System is easy to install, easy to use.

Rugged cabinet shell design is good looking.

Features "Moisture control" mode:

According soil moisture sample, control first zone irrigation, then irrigate other 3 zones according to the same length.

Applies to any soil type, accurate repeatability, low cost auto irrigation.

User can learn and setup moisture control levels according to current moisture level, or can adjust the levels on the LCD screen.

With build in clock, user can setup periods to forbid irrigation.

LCD will in sequence show: Current mode and system time, 4 valves status, system operating status and current moisture, and set wet/dry control levels.

Can program to setup maximum irrigation length.

Features "Timer control" mode:

Can program to set up different timer schedules for different valves.

Can setup three irrigation schedules for each valve.

Uses the moisture sensor as rain sensor. User can set up maximum wet control level, so when it is reached due to rain, irrigation will end.

The LCD will in sequence show: Current mode and system time, 4 valves status moisture level collected by the rain sensor.

Standard Package Contents:

1.	GG-004C Solar Powered Main Controller	1
2.	Wired latching solenoid magnetic 1" valve	1
3.	Wired moisture sensor	1
4.	Manual	1
5.	Warranty card	1
6.	How to install and operate DVD	1

5. Special Terms and Abbreviations:

Dry set level. Soil dry point, when soil moisture sample level is at or below this level, the system will start irrigation. This level is user determined, expressed as a percent, range is 1 to 99%.

Wet set level: Soil wet point, when soil moisture sample level is at or above this level, the system will stop irrigation. This level is user determined, expressed as a percent, range is 1 to 99%.

Learn Soil Moisture: Present soil moisture is remembered, uses this data to control open/close of the valve when soil is at a desired wet/dry level.

Lock Out Irrigation Period: If the system mode is "Moisture Controlled", when the moisture level is at or below the dry control level, but during the user determined forbidden (lock out) irrigation period, there will be no irrigation until the lock out period has past.

Rain sensor: To avoid irrigation during rain, the user sets the wet control level, there will be no irrigation if the wet control level is reached. The moisture sensor must be located outside an irrigated area.

Abbreviations shown on the LCD Display:

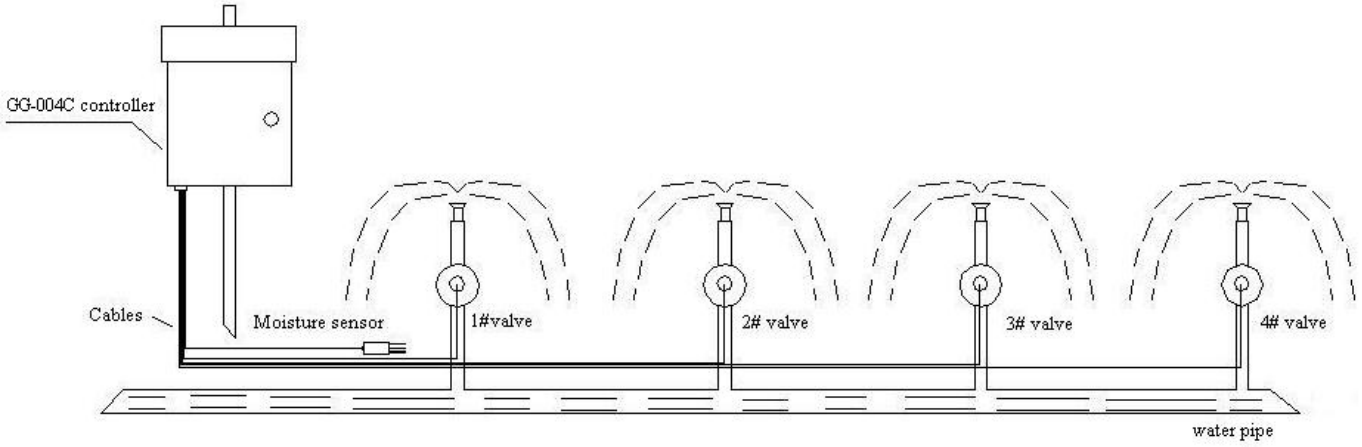
Adj	adjust		Lrn	learn
Ctrl	control		Mstr	moisture
Del	delete		Op	operating
Info	information			

6. Installation

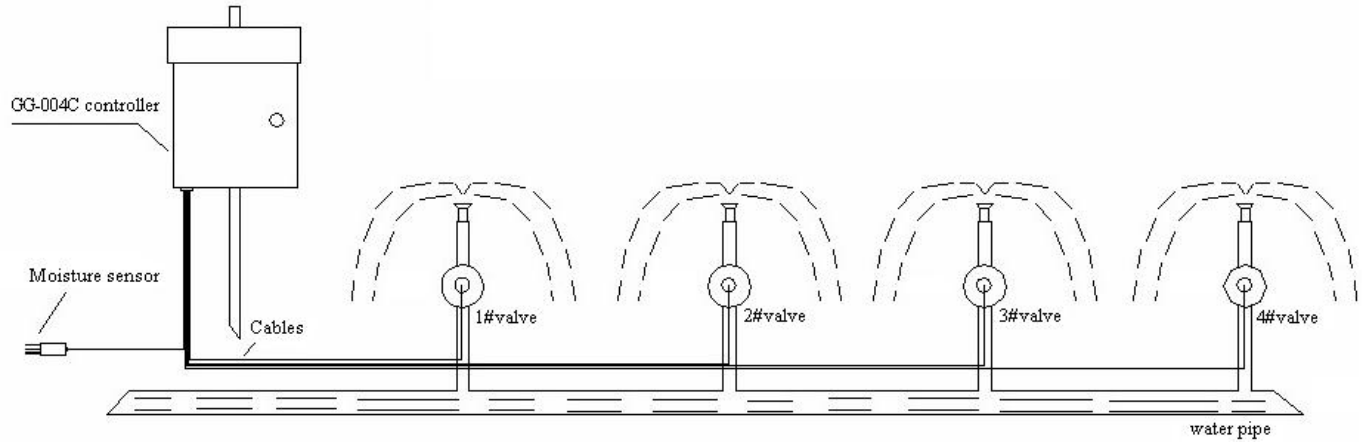
Operating Configuration

Choose the mode of operation, Moisture, or Timer Control to determine the location of the moisture sensor. The system may be installed in an existing system or installed in a new system. Valves must be changed to low power latching valves, or the solenoids must be changed to latching solenoids. The existing valve manufacturer should be contacted to see if latching solenoids might be supplied for replacement. Refer to the cabinet and wiring diagrams for connection locations referred to in the installation text and illustrations below.

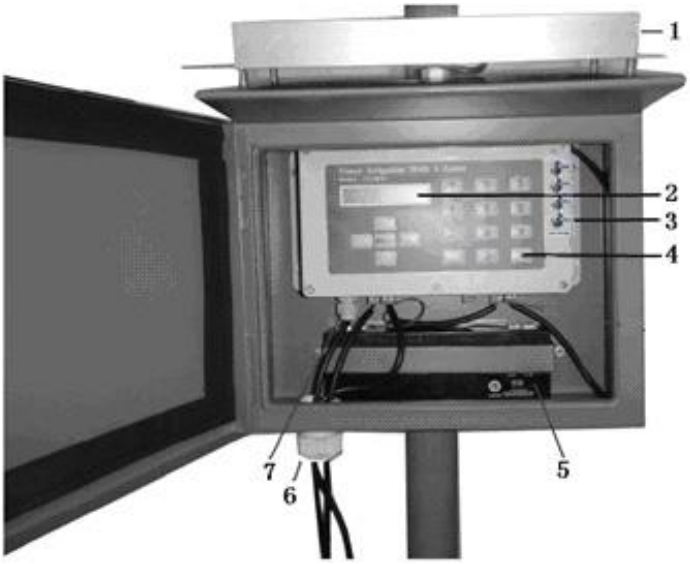
This diagram shows the "Moisture Control" mode. The moisture sensor must be installed in representative location to monitor soil moisture in zone 1.

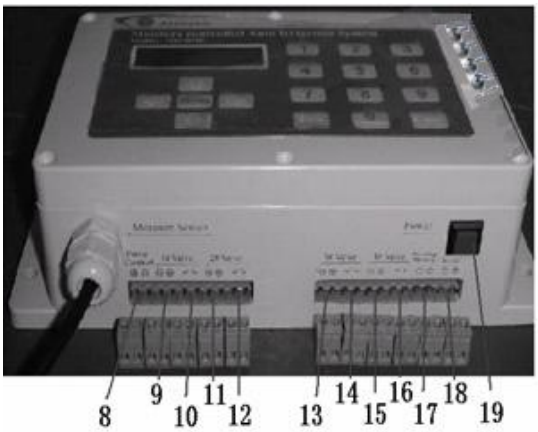


The next diagram shows the "Timer Control" mode. The moisture sensor would be used as a rain sensor; it cannot be installed near an irrigated area, must out and can be moistened by rain.

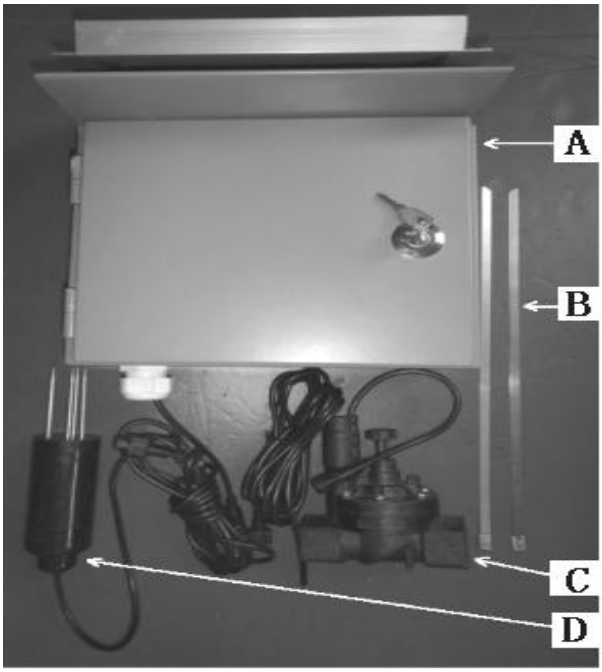


Provision for Cabinet Connections and Mounting

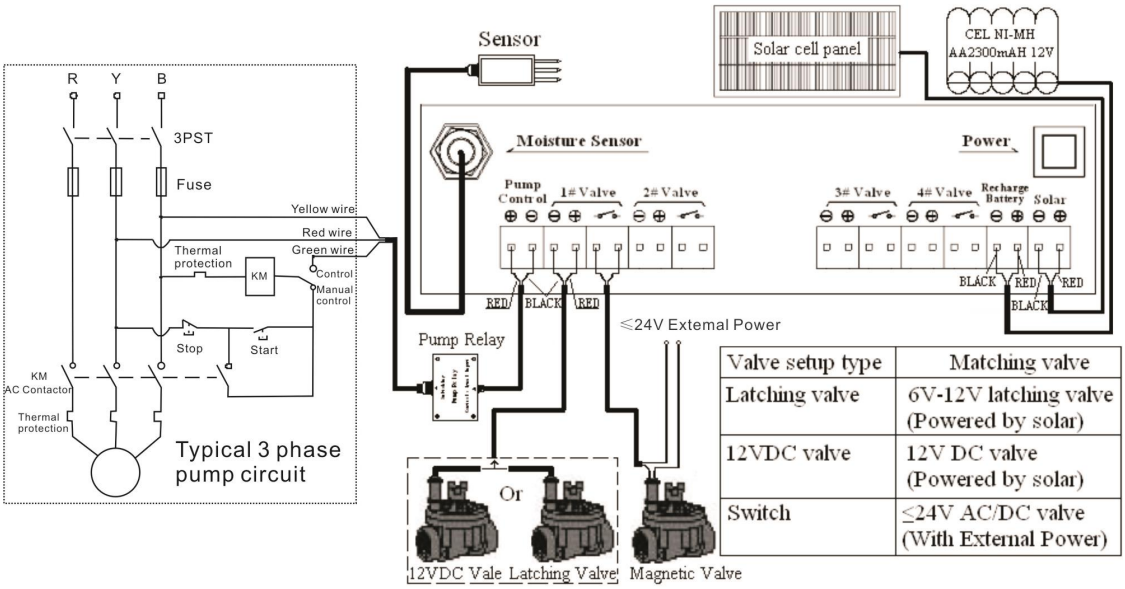




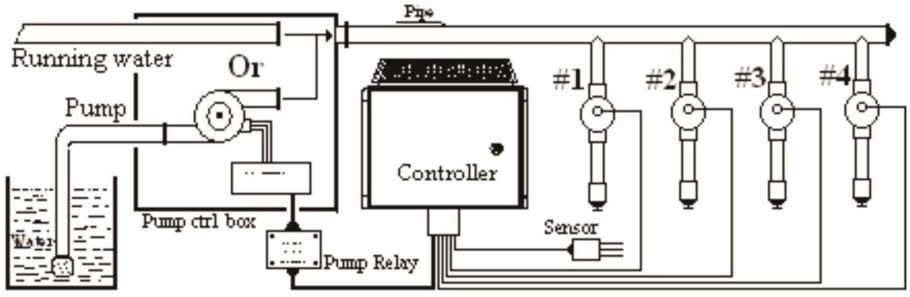
1. Solar panel
2.LCD display
3.Manual Valve Controls
4.Keypad
5.12VDC Battery
6.In/Out line
7.Moisture sensor cable
8.Pump connection
9. #1 Latching/DC valve
10. #1 on/off switch
11. #2 latching/DC valve
12. #2 on/off switch
13. #3 latching/DC valve
14. #3 on/off switch
15. #4 latching/DC valve
16. #4 on/off switch
17. 12VDC battery connection
18. Solar panel connection
19. Power switch



A. Controller Cabinet
B. Stainless steel band
C. Magnetic Valve
D. Moisture sensor

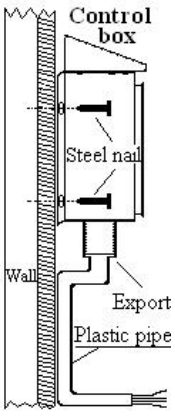


Valve setup type	Matching valve
Latching valve	6V-12V latching valve (Powered by solar)
12VDC valve	12V DC valve (Powered by solar)
Switch	≤24V AC/DC valve (With External Power)

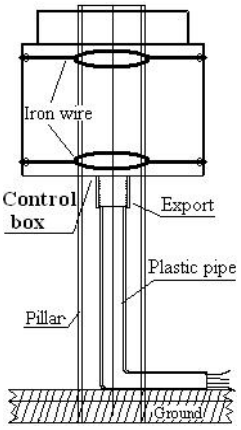


Wiring Diagram

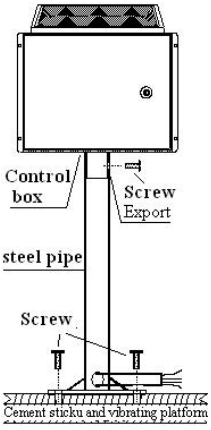
Mount the Controller Cabinet



Install the box on a wall by using nails or bolts. Orient the solar panel towards Sun. Using soft tube to protect sensor and valve cables



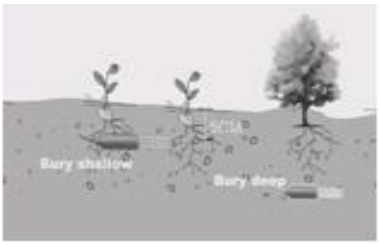
Or bound to a post. Using soft tube to protect sensor and valve cables



Or make a stand alone steel tube frame to support the controller box, and protect the sensor and valve cables.

Install the Soil Moisture Sensor

Connect the moisture sensor to the controller by threading the mating connectors together.

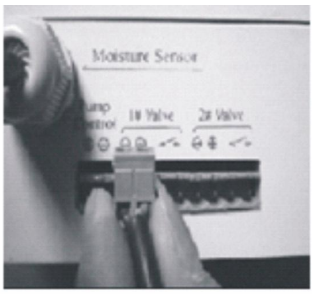


Find a representative location to dig a hole, then bury the sensor horizontally to the ground at some depth according to plants. Then pat the soil tight to make sure the soil fills the sensor probe

Install the valve in the pipe net. Make sure water in the valve will not freeze, that the water is clean, and pressure changes when the valve opens or closes will not cause water hammer..

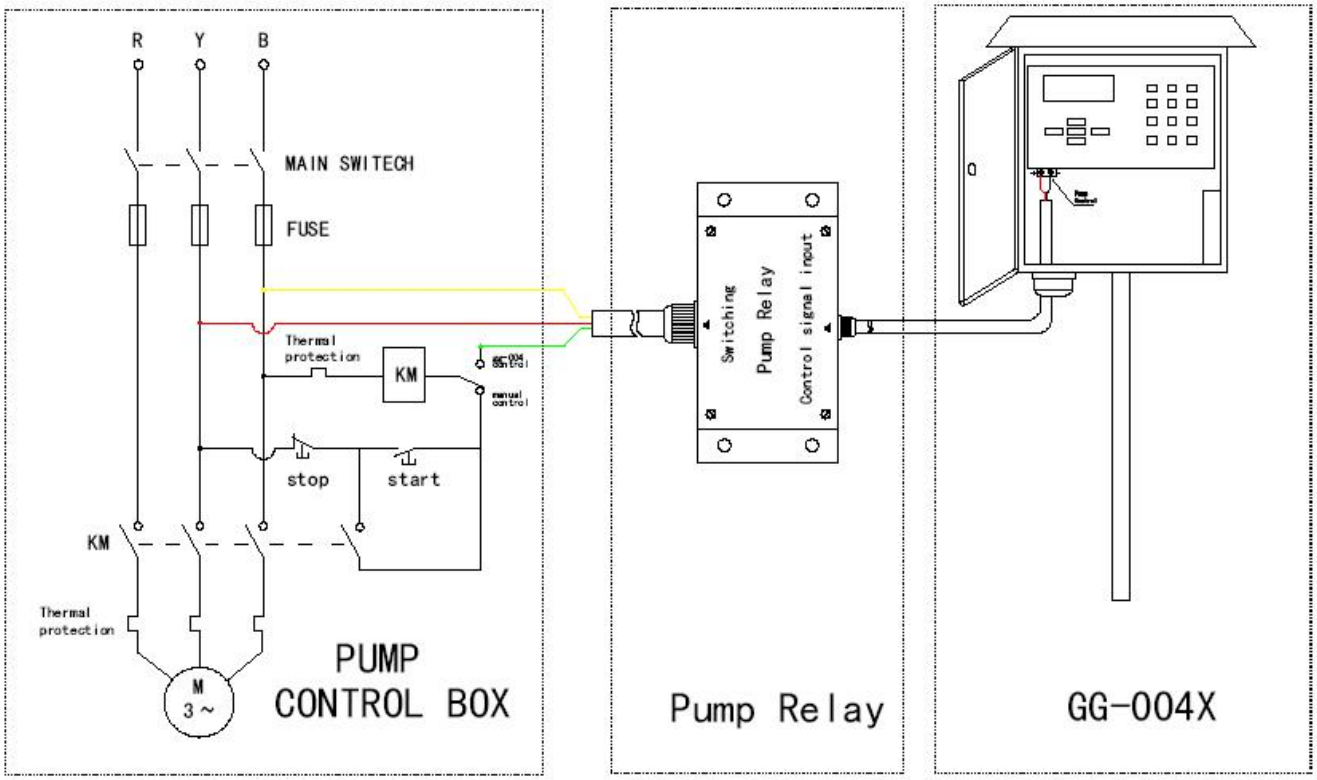
Put the valve connection wire into the box, choose correct terminal on the controller and remove it.

Reference +/- sign on the terminal, red wire to +, black wire to –, connect the valve to the terminal. (If no +/- sign, then either way is OK.)

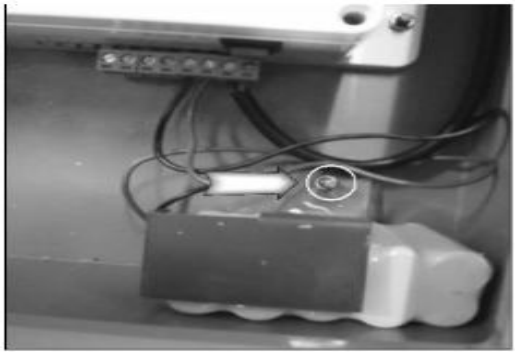


Then plug the terminal back in the controller where it came from. Make sure latching/DC valve connects to terminals with +/- sign, AC valves with AC power connect to switch terminal with no +/- sign. No errors tolerated.

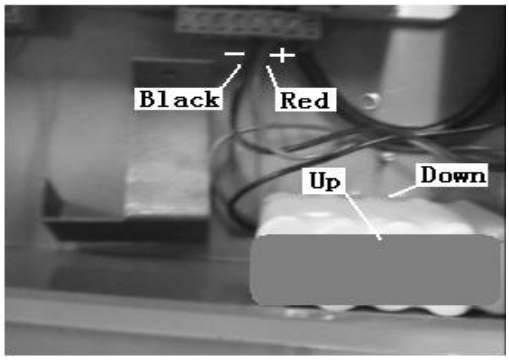
Install the pump



Install or Change the Battery



Disconnect the battery; remove the battery bracket, if necessary.



Remove old battery, remove the power connector, wrap the new battery with insulating tape, install, and then install the battery and bracket. Reconnect the power connector to the new battery, Red for +, black for -, and reconnect to the battery connector position on the controller.

7. Operation

Power On

Push and hold the power key about 4 seconds, controller will beep two times and LCD will show the following, release the power key, the controller is power on.

ANCNOBLE www.anctech.com	⇨	Processing…… Please wait

After power on, the system will first close pump and all valves, and then does self check under current mode:

"Moisture Control" check: battery level -> dry/wet control moisture levels -> moisture sensor connection -> system clock.

"Timer Control" mode self check: battery levels -> check if the rain sensor is enabled then check -> system clock.

If the battery voltage is low, the controller will enter low power consumption sleep state. If self-check does not pass, system will not operate automatically. During self checking time, still can push "Menu" into system setup, also can push "Manual" do manual control.

Low battery System asleep	*FAILURE INFO* Ctrl level fail	*FAILURE INFO* No sensor	*FAILURE INFO* Time IC failure

How to correct a failure:

1. If the battery is low, put the controller under sun, it will recharge the battery, the system will return to normal operation.

2. Make sure the sensor is good and connected. If the sensor problem cannot be repaired soon, push "Menu" key into mode setup, switch system into "Timer Control", disable the rain sensor, then the controller will temporarily return to auto control, but not to "Moisture Control" until the moisture sensor is repaired.

3. If error is wet/dry set level error, push "Menu" key, then "Wet control" menu, enter learning/adjusting menu, learn again or adjust the control levels. Note: the wet control level must be greater than the dry control level.

4. If the problem is the timer, the user cannot repair, must call customer service as soon as possible.

Power Off

Push and hold power key about 4 seconds, controller will beep two times and show on the LCD as following, then release the power key, the controller is powered off. Before turning off, the controller will close pump and all the valves.

Shutting down
Release button

System Sleep

The system periodically checks voltage of the backup battery. When the voltage decreases to less than or lower than 11V， the system will close all the valves and pump first, then enter sleep state. During sleeping time, the solar panel will charge the battery, when the voltage returns to 11.5V; the system will wake up and back to automatic operation. If the battery voltage drops to 10V, to prevent over discharge and protect the battery, the system will shut down. After shut down, sun will charge the battery, but the user must turn on the system manually.

Low battery
System asleep

Manually Open/Close a Valve

To manually control the valves, the user can change from automatic operation, to manual operation.

If it is only necessary to turn off a valve, use the front panel switch to disable it. Enabling it will return it to previous manual or auto operation.

Push “Manual” key, LCD will toggle the choice of “Manual Control” and “Auto Control”, push again to return to previous. Wait for the controller to change to the new state and exit.

If the new state is Manual, the controller will set the valves to the on or off state as

determined by the switches and show the status.

CURRENT STATE
Manual control

Note: In manual operation the state of the valves are completely manually controlled, and will continue in manual operation through the lock out period.

If the new state is Automatic, the controller will enter auto control as determined by the status, and display the status.

Show current state here Auto Irrigation

CURRENT STATE
Auto Irrigation

Display of Status

During normal operation, push any button to turn on the backlight, information will be shown sequentially on the LCD. Pages will show for 5 seconds, and then scroll to the next. Also pushing up/down keys will scroll the display. The backlight will stay on for one minute.

"Moisture Control" display

Moisture ctrl Monday 12:00	1# ON 2# OFF 3# OFF 4# X	CURRNET STATE Auto irrigation	Ctr level :30-50% Current :10%

Note: When there is failure, the LCD will change to failure display, with a beep to alert the user.

"Timer Control" display

Timer control Monday 12:00	1# ON 2# OFF 3# OFF 4# X	MANUAL INFO [__ __ __ __]	Sensitivity : 60% Current : 10%

Enable Valves

At right side of the controller, there are 4 toggle switches. The number next to each switch is the valve number. On / off are valve states in manual operation, enable / disable are states in automatic operation. Toggle the switch to the "disable / off" side; the system will close the valve first if it was open. There is "X" on the display beside the disabled valve. Toggle the switch to "enable / on" side, to return the valve to the state the controller determines.

8. System Setup

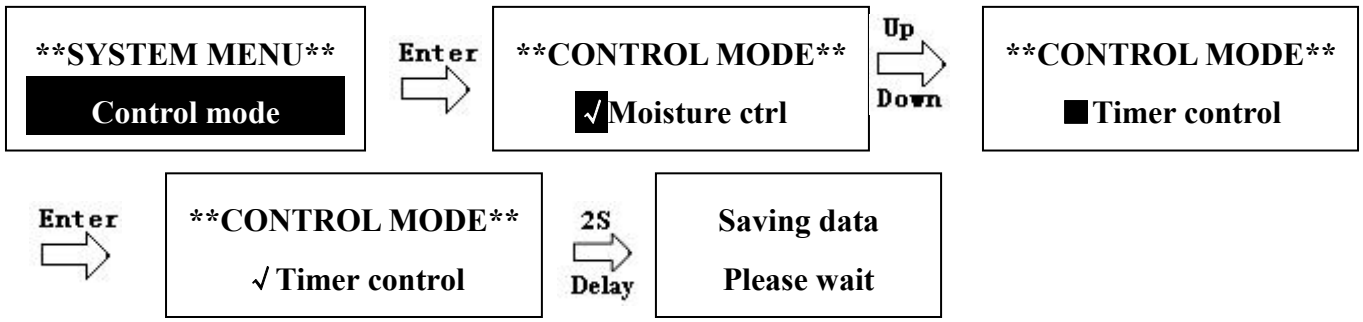
Setup provides the system with instructions and data for automatic operation:

1. Push "Menu" to setup the controller, controller will stop current operation, and wait for a new control setup to be completed.
2. When the LCD shows two digits position, if the desired input is one digit, for example - 9, the system will automatically show 09. So user can either input 9 or 09.
3. When the LCD display shows a negative view, there is submenu, use up/down keys to browse to the desired menu, push "Enter" for the submenu.
4. When the cursor is flashing, use up/down key to adjust number, or right/left key to choose position, or digit keys to key in number.
5. During setup, if a setup value is changed, push "Enter" key will be shown to remind user this is new data and it will be saved. If there is no value change, there is no reminder.

System setup has 6 sub menus, use up/down keys to browse, "Setup operating mode", "Setup valve type", "Setup calendar", "Setup time", "Moisture control menu", "Timer control menu", if the chosen menu shows negative, there are submenus.
Push "Enter" key to setup, push "Exit" to exit. If no key has been pushed after 1 minute, the system will exit.

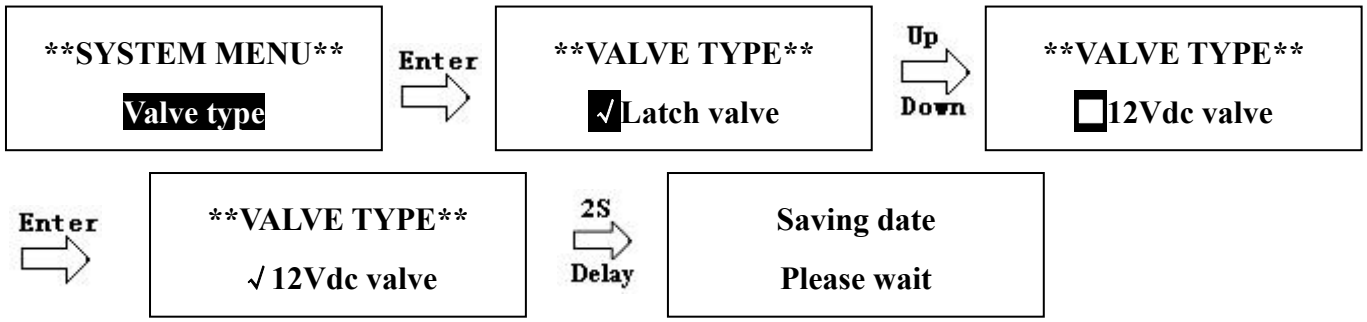
Choose Operating Mode

Push "Menu" key to begin system setup, push up/down key to browse, choose "Operating mode", push "Enter" to enter this setup.



Set Valve Type

Push "Menu" key to begin system setup, push up/down key to browse, choose "Valve type", and push "Enter". The current type will show with "√" in front. Push Up/Down keys to select "Latching valve"->"12V DC valve" -> "Relay Control", push "Enter" key to save, "√" will be added to the selected item, display for 2 seconds to remind user that it is selected and saved, then LCD will show the choice is been saved and back to previous menu. Push "Exit" to exit without saving.



Note:

The controller can use one of three types of valves.

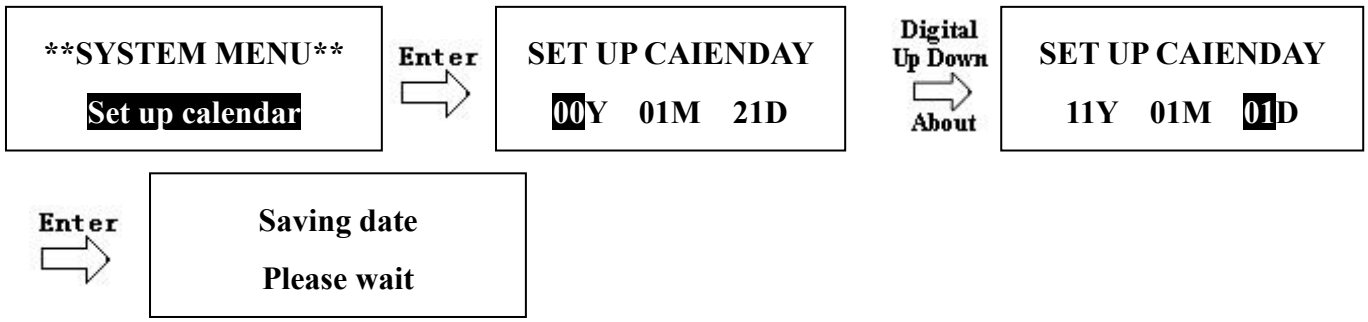
User must choose the valve type according to the application. Make sure the setup of valve type matches the valves and correct polarity is used.

Valve Setup Example:

1. For latching valves installed, electrical connection should use, "latching/DC" electrical connector position, the setup for the valve type is "Latching Valve".
2. 12V DC valves, electrical connection should use "latching/DC" connector position, the setup for type is "DC Valve".
3. Valves with external power supply, connection should use "Relay" connector position; this is a relay contact closure for valve open the relay contact is closed, irrigating, setup type is "Relay".

Calendar Setup

Push “Menu” key to begin system setup, push up/down key to browse to “Setup Calendar”, push “Enter”. Current time is shown. Push up/down key to increase/decrease the time, or key in the number. Push right and left arrow key to move cursor to y-m-d.

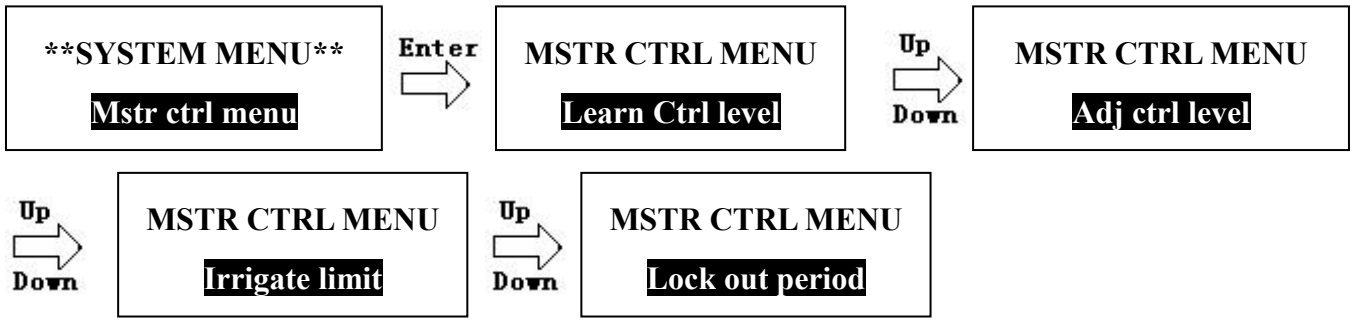


Clock Setup

Setup procedure is same as Calendar, above, select “Setup Clock.”

Moisture Control Menu

From main menu select **“Moisture Control Menu”**, setup the moisture control mode here. Push “Enter” to select “Moisture Control Menu”, use up/down keys to select “Learn Control levels”, “Adjust Control Level”, and “Setup lock out period”.

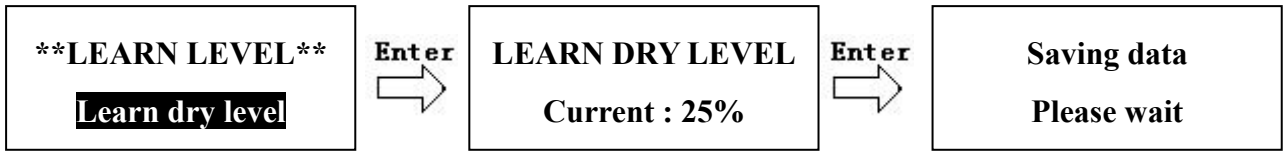


Learn Moisture Control Level

Under “Moisture Control Menu” choose “Learn Control Levels” then push “Enter”. There are “Learning Dry Control” and “Learning Wet Control” menus select using the up/down keys.

Learn Dry Control Level

Under “Learn Control Level” menu, choose “Learn Dry Control” then push “Enter”.



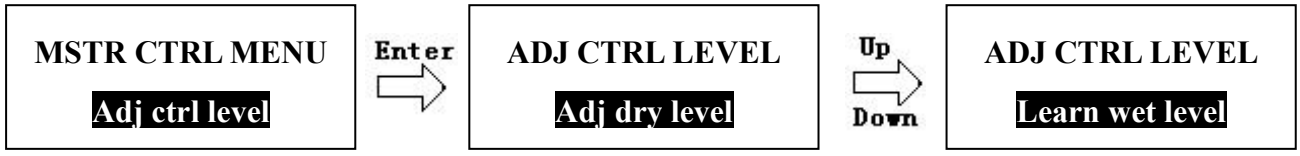
Current moisture will be shown, this is the present value collected by the moisture sensor, push “Enter”, this new moisture level is learned as the new set dry control level, replacing the old one, and returns to the previous menu. Pushing “Exit” will not save the new data, and returns to the previous menu.

Learn Wet Control Level

Setup is same procedure as learning Wet Level, above.

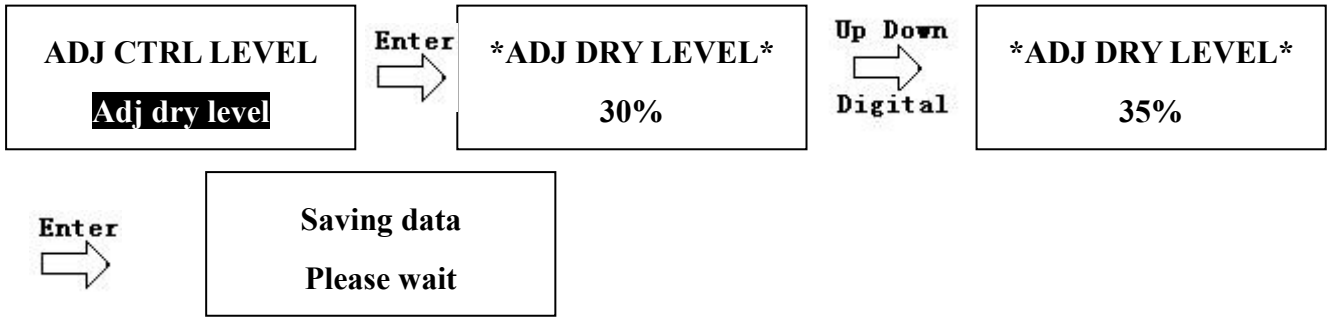
Adjust Control Levels

Under “Moisture Control Menu”, choose “Adjusting Control Level”, push “Enter”, there are ” Adjust dry control” and “Adjust wet control” selected using the up/down keys.



Adjust Dry Control Level

Under “Adjusting control Level”, choose “Adjusting Dry Level”, and then push “Enter”.



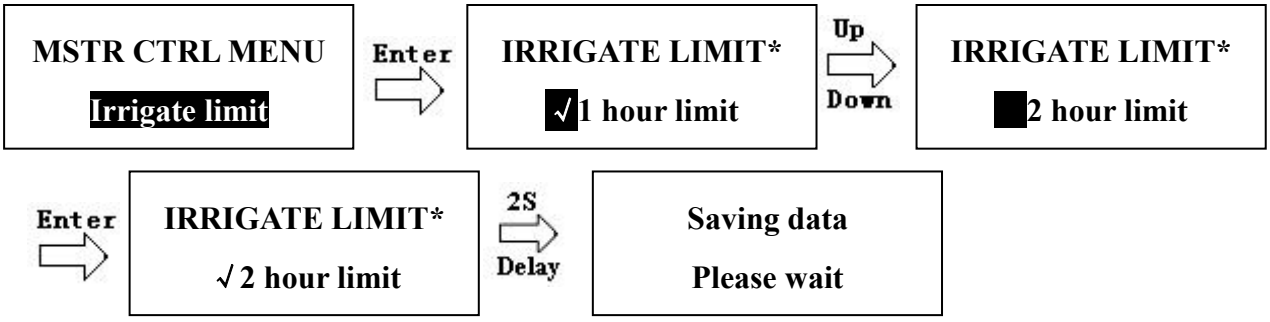
The display will show current setup value, the cursor will flash at the value position. User can enter the number, or push up/down key to adjust until reaching the desired %, then push “Enter” to save new value, and return to previous menu, or push “Exit” to exit without saving.

Adjust Wet Control Level

Setup is same procedure as Dry Control Level, above.

Setup Maximum Irrigation Period

Under "Moisture Control Menu", choose "Irrigate Limit", push "Enter, then will show choices of "1 hour limit"-> "2 Hours Limit" ->"4 hours Limit" ->"6 hours Limit". Irrigation limit only limit under moisture control mode, not to manual/timer control.



Setup Lock Out Irrigation Period

Under " Moisture Control"，choose "Setup Lock Out period" and "Enter" key to enter, then there are two choices, "Edit Period" and "Copy Period".

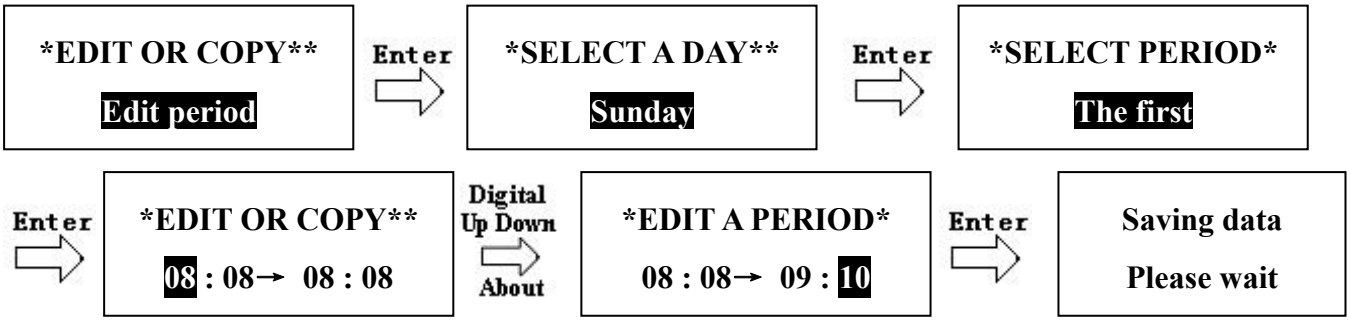
Edit Irrigation Lock Out Period

Under " Edit or Copy"， choose "Edit Period" push "Enter", display will ask setup lock out period at which day, from Monday to Sunday. Choose one day, then there are two sections of lock out period for each day, choose one.

This system time is 24 hour format, lock out period format is: XX:XX→ XX:XX hour: minute→hour: minute. Start Time→Finish time, system only recognizes correct data as finish time greater or equal to start time, otherwise data will treated as in error. If start time equals finish time, then the lock out length is 0, same as no lock out period.

During time setup, the cursor will flash in the position of hours or minutes, push up/down

key to adjust, or key in number, or move cursor to the digit's position then key in the number. Push "Enter" to save, and return to the previous menu. If the set up is wrong, the system will remind user there is entry error, and return to "Edit". Push "Exit" key exit without saving.



Lock out period has a beginning and ending time selection, during the lock out period, there is no irrigation except manual irrigation. The lock out period only functions under moisture control mode, not for timer.

If the user wants to set lock out period over two days, for example, from Tuesday 14:00 to Wednesday 09:00, set lock out times as following:

Tuesday → First section 08:00 → 08:00 Second section 14:00 → 23:59
Wednesday → First section 00:00 → 09:00 Second section 13:00 → 15:00

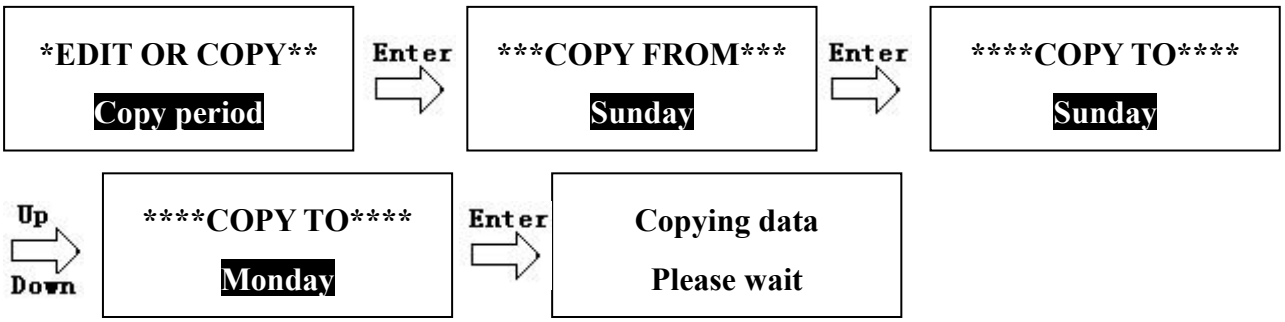
As above, Tuesday's first section no lock out period. From 14:00 start lock out, until second day 09:00. Wednesday 13:00 start to lock out again, until 15:00。

Note: User also can setup as following, but the lock out function is exactly same:

Tuesday → First Section: 14:00 → 23:59 Second section: 08:00 → 08:00
Wednesday → First section: 13:00 → 15:00 Second section: 00:00 → 09:00

Copy Lock Out Period

Under " Edit or Copy"，choose "Copy period" and push " Enter", display will ask where to copy from, choose the day to copy from, push "Enter" again, display then will ask where copy to, use up/down keys to choose, push "Enter" to copy, then exits and returns to pervious menu.

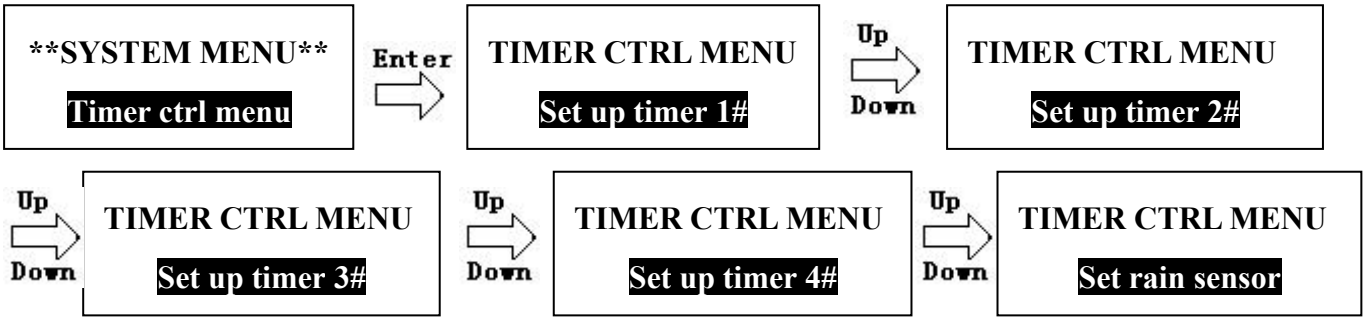


Above illustration to show how to copy Sunday setup which is already done, to Monday, including both two sections.

Valve Timer Control

Valve Timer Control is independent of Moisture control. The setup for valve timers 1 through 4 is the same., From main menu choose, "Timer Control", push "Enter". Then user can browse to "Setup timer 1#"->"Setup timer 2#" ->"Setup timer 3#" ->"Setup timer 4#" ->"Setup rain sensor", 5 items total.

Timers #1,2,3,4 control valves #1,2,3,4. Setup each one separately.



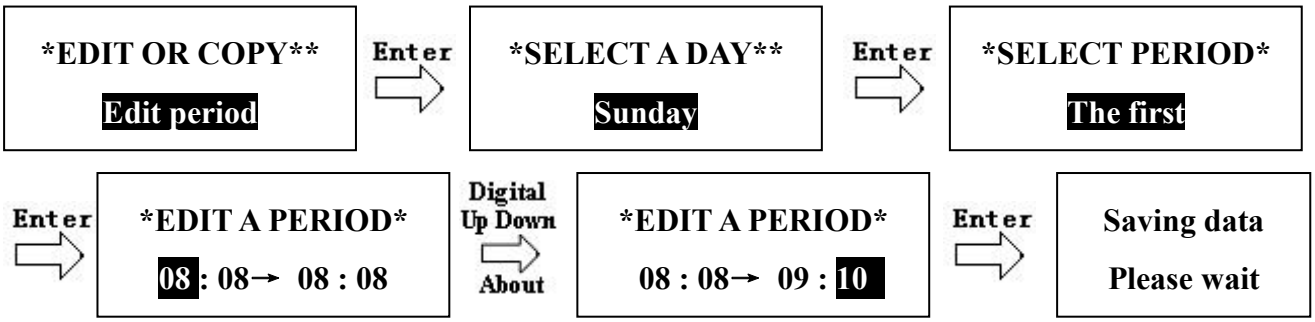
Setup a Valve Timer

Under " Timer Control" menu，choose " Setup timer #1 (or 2,3,4)", push " Enter", there are "Edit Period" and ->" Copy Period " to choose from.

Setup Irrigation Timer for this Valve

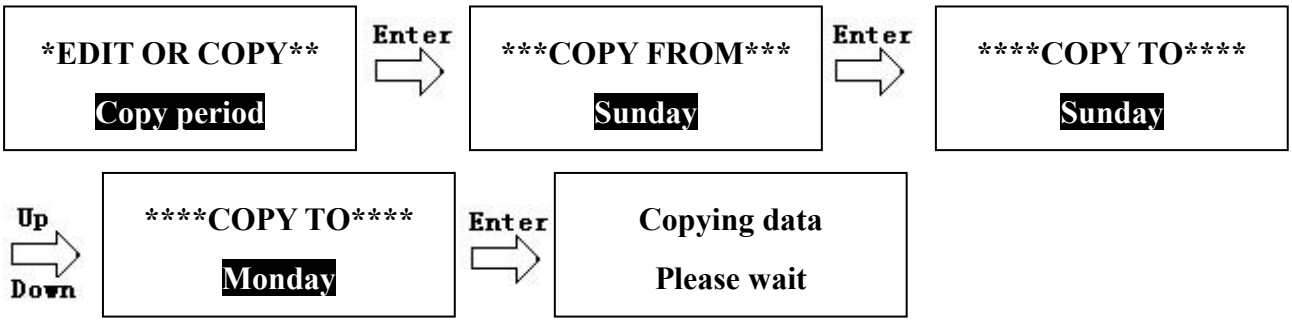
Reference, Edit Lockout Period for similar setup; the difference is, the timer can setup to three irrigation sections for one day, to meet different irrigation requirements. If any

periods of irrigation are not needed, then set them as: Start time=Finish time.



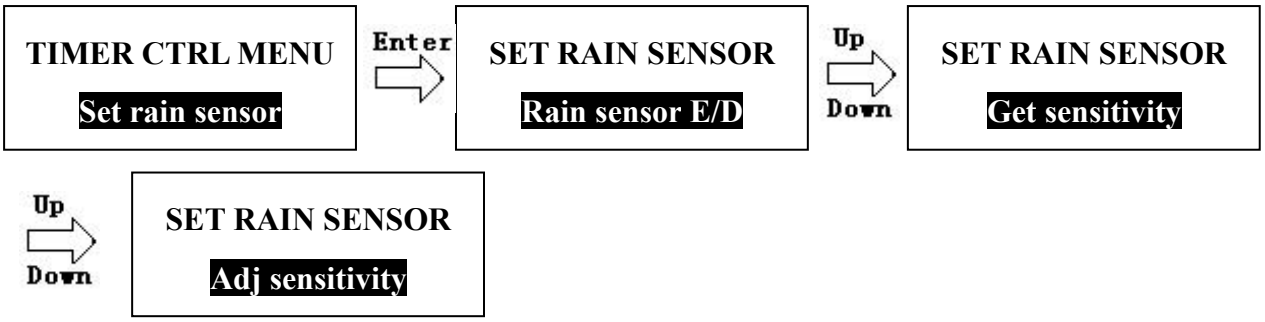
Copy Timer Schedules for this Valve

Reference, Copy Lockout Time Period for similar setup; the copy function is limited to this timer and copies only one day at time.



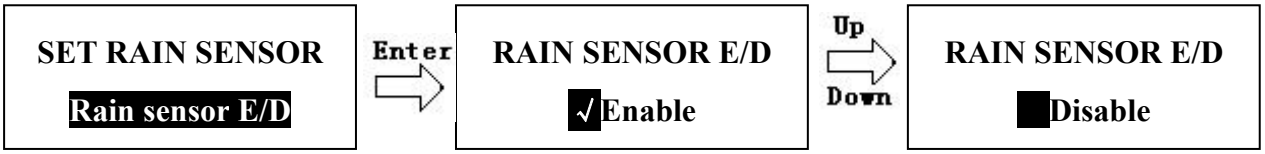
Setup Rain Sensor

Under " Timer Control" menu，choose "Set Rain Sensor" and push "Enter." There are three choices of "Rain sensor E(enable)/D(Disable)" -> "Get sensitivity (learn existing moisture %)" -> "Adj(ust) sensitivity".



Enable/Disable rain sensor

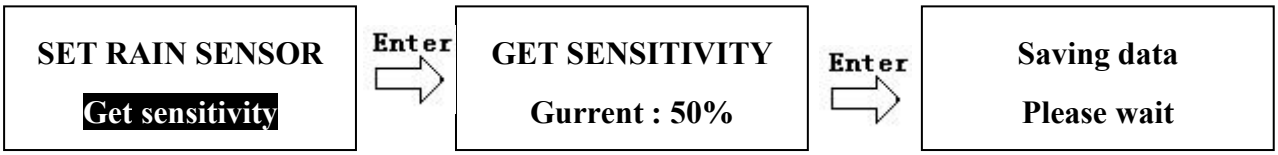
Choose "Rain sensor E/D" push "Enter."



When the system is run under "Timer Control" mode with rain sensor enabled, the controller will the check rain sensor before opening the valve. The valve only be opened when the current moisture level is lower than the set rain control sensitivity.

Learn Rain Sensor Sensitivity

To adjust the rain sensor sensitivity to rain, choose "Get Sensitivity" menu, push "Enter" key, for details of how to setup, reference learn dry control level.



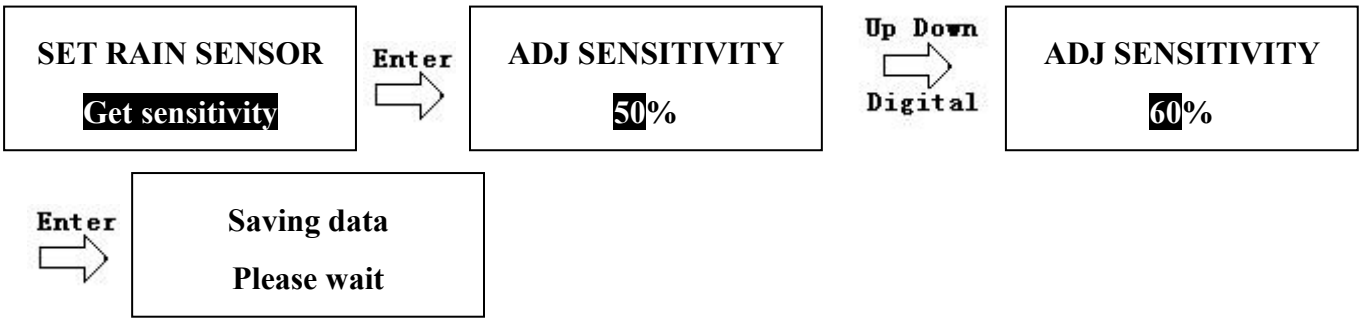
Learn rain sensor sensitivity means the controller learns/remembers one moisture percent level as standard to judge if there was rain. In "Timer Control" mode, the moisture sensor is used as a rain sensor. If the current moisture level is lower (drier) than the setup moisture level, then there was no rain, otherwise there was rain, and the controller will not open the valve.

Note: When the moisture sensor is used as a rain sensor, do not install it where it may sense moisture from irrigation.

Adjust Rain Sensor sensitivity

Adjust the rain sensor sensitivity sets the moisture level % using the up/down keys, to fine-tune the adjustment.

Choose "Adj(ust) sensitivity" menu, push "Enter", same as adjust dry control level.



9. General Q&A

1. Q: why does the LCD show “Irrigating,” but there is no irrigation occurring, when the LCD does not show “Irrigating,” the irrigation is on?

A: Check magnetic valve connection polarity, most probably the wires are reversed.

2. Q: Why after learning a new current wet level, does the system not stop irrigating right away?

A: Possibly one of the following situations:

a. If the moisture sensor is moved, after learning the wet level, it may be incorrect.

b. If water is manually added to the soil, then a wet level is learned; the learned level could be very high, since water could be temporarily accumulated on the surface. Use the displayed % reading as a guide to determine what reading is correct. If the learned value is too high, learn the moisture level again later when the soil dries to the desired level, or set the moisture level directly.

c. If LCD still shows “Irrigating”, not situation of A or B, then check if the moisture sensor is still good. See question 4.

3. Q: Valve #x is shown as off, but irrigation is still on.

A: Possibly the valve has problem and is stuck on. Manually turn off irrigation, listen for a click from the relay in the controller and from the valve.
Watch the valve to see if the problem recurs. Replace the valve if necessary.

4. Q: How to determine if the moisture sensor is working normally?

A: For either moisture control or timer control enter a “Learn” function for moisture. The LCD will show the current moisture level. When the moisture sensor needle is in the air, the number should be 0, then put the sensor needles into water slowly, the moisture value will increase, until the display reaches about 99%, this means the sensor is working normally.

5. Q: The LCD shows the word “Failure” and the controller beeps once every 3 seconds.

A: The controller allows one hour to judge failure after beginning irrigation. The one-hour period begins after the open valve command issued. After one hour, if the

moisture % is greater than the as set dry control level, controller will believe the irrigation is normal, otherwise it will believe there is a failure. Failure could be a broken pipe, or failure to open the magnetic valve... The controller also has one hour to judge failure after stopping irrigation. The one-hour period begins after the close valve command issued. After one hour, if the moisture % is greater than the as set wet level, the controller will believe there is a failure. Failure could be a broken pipe, or failure to close the magnetic valve... System will show “Failure” on the LCD, and beep every 3 seconds to alert the user.

If after closing the valve, right in one hour it starts to rain, there will be a failure notice too. Rain at any other time, will not cause a failure notice.

Any of the above failure indications will end when soil moisture returns to normal.
Also can delete the alarming by push “Setup” key then “Exit” key, or push manual key.

6. Q: Why #1 valve keeps irrigating.

A: This system uses the #1 valve to realize auto irrigation, all other valves are opened for the same irrigation length as #1 valve. Therefore make sure the moisture sensor is installed at the #1 valve zone, otherwise the system cannot work.

9. Standard Package Contents

1.	GG-004C Solar Powered Main Controller	1
2.	Wired latching solenoid magnetic 1” valve	1
3.	Wired moisture sensor	1
4.	Manual	1
5.	Warranty card	1
6.	How to install and operate DVD	1

Shanghai ANC Technology Limited Warranty card

Dear Customer：

Thank you very much for choosing ANC products.

1. This product has FCC verification and BV certification.

2. Warranty period is one year. Beginning on day of receipt.

3. Please keep your receipt and this warrantee card.

4. Please verify contents are correct, see included items listed in the manual.

5. For warranty repair, customer is responsible for shipping to ANC; ANC pays shipping to customer.

6. Beyond the warranty period, or for damage caused by customer or for other than defects in material or workmanship, ANC offers repair service at customer's expense.

7. Service phone: 021 5974-3993, in China; 1 805 530-3958, or toll free 1 877 822 3958 in North America.

Product			**Type**	
User name			**Ship date**	
Address			**Serial #**	
Tele			**Purchasing date**	
Fax			**Zip code**	
Repairing Record	**Check date**	**Problem**	**What been done**	**Repairer**

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