

Mini Irrigation Controller with Moisture Sensor

(GG-005 series)

Rev: HW2.01 FW2.01

Patent is Pending

User Manual

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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Operate the system with the moisture sensor stakes fully inserted in the ground.
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by ANC Technology could void the user's authority to operate the equipment.

This controller optimizes watering for backyard organic vegetable, fruit trees, green lawn and vertical landscape.

Saves water, reduces maintenance cost and protects the environment.

GG-005C-1 Illustration



GG-005 General description:

- Built in 3/4" valve with M-F hose thread ends.
- Plug in moisture sensor/Rain sensor.
- Including both "Moisture Control" and "Timer Control" modes, push-hold mode key to switch.

- Powered by solar panel with 4x AA rechargeable battery, or 4x AA alkaline battery, or 100Vac to 240Vac adapter.
- Added digital temperature compensation, to avoid the moisture reading deviation with change of temperature

Extension cable: Suggested maximum length for GG-005 moisture sensor is 20 meters.

Valve specification:

Thread: USA hose standard 3/4" NH-11.5 female inlet, male outlet


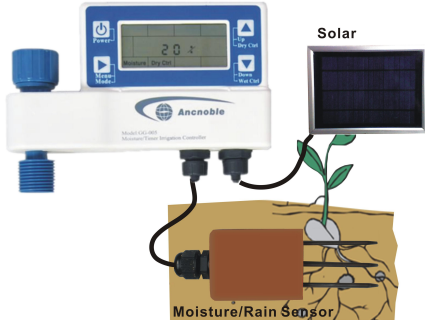
Built in low Flow Magnetic Latching valve, suitable for drip and spray.


Operating pressure: 0.02~0.8MPa, 3 to 110psi, Maximum pressure: <0.8Mpa, <110psi

Flow @ different pressure: 0.02MPa > 2 L/min, 3psi > 0.5gpm; 0.2Mpa > 9.5L/Min
30psi >2gpm

Water Temperature range: 1°C to 40°C, 2°F to 104°F

GG-005 versions:

P/N Prescription	Picture	Standard Package
GG-005B Moisture/Timer Controller Battery operated.		Built in valve + soil moisture sensor + 4x AA Alkaline battery
GG-005C-1 Moisture/Timer Controller Powered by Solar panel with rechargeable battery		Built in valve + soil moisture sensor + Solar panel + 4x AA rechargeable battery

<p>GG-005C-2 Moisture/Timer Controller 100V-240Vac power operated</p>		<p>Built in valve + soil moisture sensor + 100Vac-240Vac adapter</p>
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“Moisture control” mode:

- Push-hold “Mode” key until it is “Moisture” control mode.
- When the soil just needs watering, push and hold “Dry Ctrl” key to set this as the Dry control level, after watering, when the soil is just wet enough, push and hold the “Wet ctrl” key to set the wet control level. (Don’t need into setup program to do this, do in normal work status)
- The system will keep the soil moisture level within the set up range.
- User can adjust wet/dry control levels on the screen using up/down keys.
- Set maximum watering duration to prevent flooding by a fault, such as a broken hose.
- Moisture sensor may be buried shallow or deep in the soil, the deeper the sensor is buried, the longer it will take to sense added moisture. Do not move the moisture sensor after setup, or the moisture readings will change. If the sensor is moved, reset the Dry/Wet control level.
- Set irrigation time window for special requirement.
- The LCD will in sequence show “Dry control %, Current %, Wet control %, Max (Watering Duration time)”.

“Timer control” mode:

- Push-hold “Mode” key switch to “Timer” control.

- Uses the moisture sensor as rain sensor to prevent irrigation in the rain.
- Set “Max %” for the rain sensor as desired. When the soil reached this %, watering will cease. If put the rain sensor in the range of no irrigation, and set the moisture % very low, which will make the rain sensor to be more sensitive to the rain.
- User can set up interval when not watering and length of watering duration as desired.
- Set maximum moisture % of the rain sensor also can be used as preventing flooding if there is a fault, such as a broken hose.
- Set clock and irrigation start time to control the irrigation timing.
- The LCD will in sequence show “Interval, Duration, Max % (moisture from rain sensor)”.

Installation:

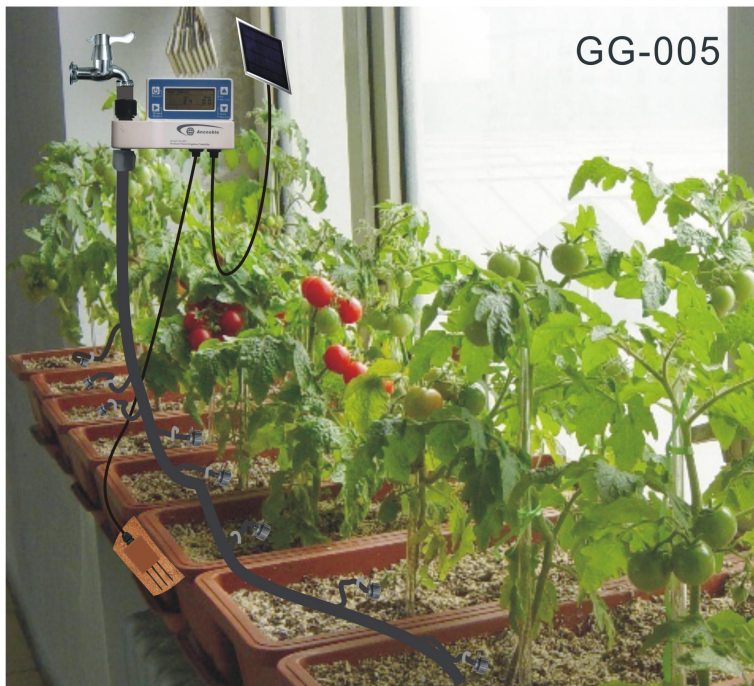
1. For controllers with batteries, remove the battery holder at the rear of the controller, install 4x AA rechargeable batteries or alkaline batteries if no solar power adapter is used, and replace the battery holder.
2. Connect the controller water inlet fitting to a hose valve.
3. Remove the protective cap from the lower right side power socket of the controller, align the polarization guide and insert the solar panel, or ac power adapter connector into the two pin socket, then thread the waterproof cap.



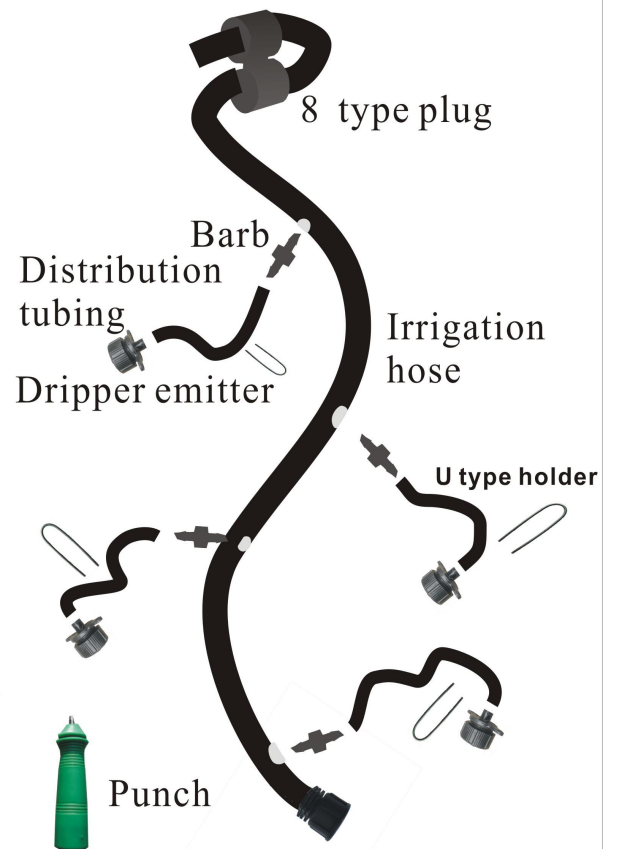
4. Connect the moisture sensor to the remaining three pin socket like the power was connected above.
5. There are 4 holes on the rear of the solar panel. Use wires to attach the panel to a post, fence or tree. Solid copper or aluminum wires (not supplied) may be used. Plastic tie wraps will degrade with time if exposed to sunlight. When in sunlight, the panel will charge the batteries till it is enough to set up the controller, one half day of exposure to the sun will have good charge. Will show battery icon when the voltage is low.
6. Bury the moisture sensor in the soil or pot:



7. For the drip line set up, the user may order dripset-5 from us, which includes the parts shown below. If the water pressure is above about 30 psi (200kPa), a pressure regulator should be installed (not supplied, 20 psi, 130kPa typical). If greatest water flow is needed, install the regulator after the valve.



- Step1: Connect the drippers to the distribution tubes.
 Step2: Install a barbed coupler to the other head of the distribution tubes
 Step3: Punch holes in the irrigation hose using the punch.
 Step4: Insert the barbed coupler with the distribution hose and dripper into the irrigation hose.



Connecting with the controller GG-005

Operation:



1. Power on/off

Push and hold the power key “” until two beeps to turn on or off.

2. Choose Mode.

Push and hold the mode key “” to change the operating mode.


3. Set Up

Push (Not push and hold) right arrow key “” to view or set data, when numbers flash, push the up/down keys to adjust. The controller will save the data automatically, if left alone one minute will exit, or push “” key to view and edit the next item. If the display does not flash, the set up menu has exited.

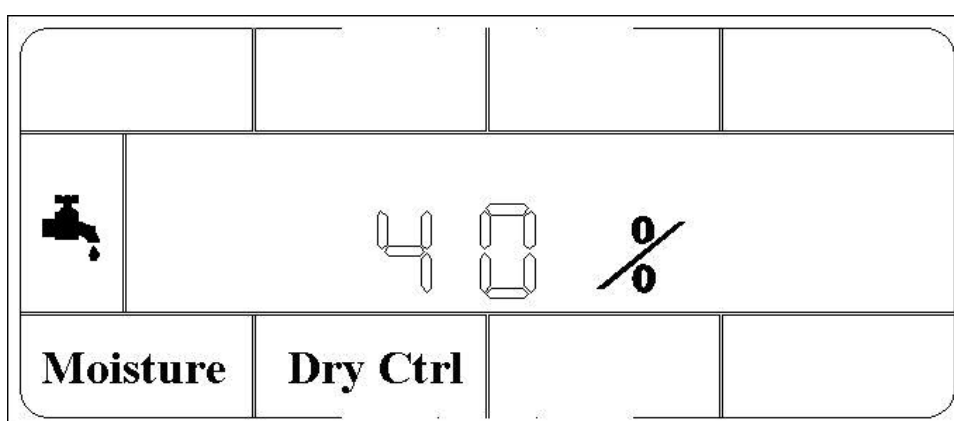
“Moisture” mode:

Watering is controlled by moisture levels sensed by the built in moisture sensor.


Note: When learning Dry/Wet Ctrl %, please don’t let the controller into set up status.

- 1.) Under normal work status, wait until the soil is just dry and ready for watering. Push and hold the “Dry CTRL” key until there is a beep, (Two beeps means successful learning. One beep means fail.). Then the built in valve will open and watering will begin. This dry moisture level will be remembered.
- 2.) Wait until the soil is just wet enough to end watering, push and hold the “WET CTRL” key until there is a beep, (Two beeps means successful learning, one beep means fail.) The valve will close; this wet level will be remembered.
- 3.) After this setup, the controller will automatically control irrigation using these two control points. The controller will show in sequence the remembered “dry control %”, “Wet control %”, and the “current %”.
- 4.) To edit the wet/dry levels, push the right arrow key “” to choose “Dry Ctrl” (dry control %), or “Wet Ctrl” (wet control %), when the digits are flashing, push Up/Down keys to adjust the Dry/Wet control levels. Push and hold the Up/Down key will speed up adjusting.


Dry control %:





Current moisture %:

	38%		
Moisture		Cur Level	


Wet control %:

	50%		
Moisture			Wet Ctrl

- 5.) User can push the right arrow key “” to change other setups, for example, the MAX irrigation length.


			Max
	Hour		Minute
	02		00
Moisture			

- 6.) Set up clock and permitted irrigation window.


	Hour	Clock	Minute
	10	:	30

For permitted irrigation window, the range is from 0:00 to 24:00. For example, if set irrigation window from 7:00 to 9:00, which means no irrigation at other time even the moisture % reached or below dry control %. It is for customers with special irrigation window requirement.

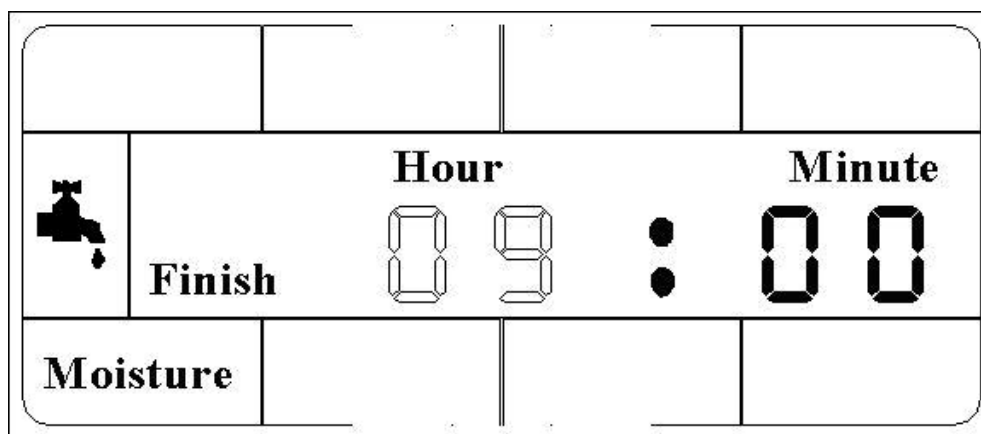
Set clock:

	Hour	Clock	Minute
	10	:	30

Start time:

	Start	Hour	Minute
		07	: 00
Moisture			

Finish time:



NOTE:

1. “Dry /Wet control%” range is from 1% to 99%. The wet control % must bigger than dry control % or an error is indicated by a beep every 5 seconds.

Definition of terms:

Dry Control Point: When the current moisture level is equal or lower than this %, the valve will open and begin irrigation.

Current Moisture: Current moisture % measured by the attached moisture sensor.

Wet Control Point: When the current moisture level is equal or higher than this %, the valve will close and irrigation is completed.




Maximum time: The valve will be closed if irrigation time reaches this limit.

Note: If want to set the controller irrigate according to dose, then follow steps as following:

1. Set dry control %.
2. Set Maximum irrigation time length as irrigation dose, like 10 minutes.
3. Set the wet control % at 99%.

Because maximum irrigation time has priority over wet control %, then the controller will start to irrigate when the dry point is been reached, irrigate 10 minutes, stop. Next time irrigate again only when the soil reached dry control %.

“Timer” mode:

- 1.) Push the right arrow “” to set “Interval”, the period between watering. When the digits flash, push up/down keys to choose the hours and minutes.
- 2.) Push the right arrow key “” to set “Duration”, the period of watering. When the digits flash, push up/down keys to choose the Hours and minutes.
- 3.) Set up clock, then set irrigation start time. For example, if you set start time at 5:00am, interval is 23 hours, the duration is 1 hour, then the controller will irrigate every day from 5:00 am to 6:00 am. If the start time is 5:00, interval is 23 hours, the duration is 30 minutes, then second day irrigation time will be at 4:30am. For timer function, this irrigation start time only function for first cycle, then schedule irrigation according to interval and duration.
- 4.) The controller will automatically control irrigation according to the setup time schedules. The controller will show current moisture % if it has a moisture sensor.
- 5.) Push the right arrow key “” to choose “Max %” setup, which is also the rain sensor control %. Put the rain sensor in a dry place outside of a watered area, to make the rain sensor more sensitive to the rain and less sensitive to watering, place the sensor in the watered area to sense if there has been too much water applied.

Definition of terms:

Interval time: Interval time between irrigation finish time of last event to next irrigation start time.

Duration: Length of time for each Irrigation event

Maximum Moisture %: Irrigation will end when the moisture level reaches this %.

Current Moisture: Current moisture % measured by the attached moisture sensor.

ANC Technology Limited Warranty card

Dear Customer:

Thank you very much for choosing ANC products.

- 1. This product has FCC verification.**
- 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. In no event will ANC Technology be liable to any party for any direct, indirect special or other consequential damages for any use of products or information. Service phone: 021 5974-3993, in China; 1 805 530-3958, or tolling 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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