

ion Genesis™ Pump Controller

Digital Level Control With Pump Alternation And High Water Alarm

USER'S GUIDE

Dated: 04/16/2010

Supersedes: 04/12/2010

Document No.: IONG-OM

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SAFETY PRECAUTIONS



WARNING: To prevent fire or shock hazard, do not expose this product to rain or moisture. This product has a NEMA-1 rated enclosure for use in an indoor environment. Never spill liquid of any kind on the product.



CAUTION: Risk of electric shock. To reduce risk of electric shock, do not remove cover. There are no user serviceable parts inside. Refer servicing to qualified service personnel.



CAUTION: To prevent electric shock, ensure product is connected to a grounded outlet. The electrical outlet should be properly wired to a dedicated 15-amp circuit breaker. Proper short-circuit and overload protection must be provided at the distribution panel. Install in accordance with all local and national electrical codes. Recommended mounting is above floor level. For best performance, do not use electrical extension cords.



Patent pending

GENERAL OVERVIEW

The ion Genesis™ is a residential sump pump controller for 1 or 2 pumps that includes redundant water level sensors, a configurable water level/pump turn-on setting, 2-pump alternation, pump failure sensing, local audible/visual alarm notification, and optional remote alarm notification.

This product is for use with manual pumps only. A manual pump is a pump that runs when plugged into an outlet. Sensors are supplied with this unit for control.

Indicators

The front panel has lights, a display, and a sounder to offer direct feedback to the homeowner.

Buttons

The front of the controller has buttons labeled “RESET/TEST” and “PUMP TURN ON LEVEL”.

The RESET/TEST button has two functions and may be depressed while no pumps are running. When pushed, it runs the first pump temporarily, followed by the second pump if it exists. This can be used for pump troubleshooting, and the controller will remember how many pumps are available for future use. This button *must* be pushed once after removing or adding any pumps.

The PUMP TURN ON LEVEL buttons set the water level at which the pump(s) turns on. This level is measured in inches, up from the middle of the lower water sensor (see the Installation section). When the water level is pumped down to the middle of the lower water sensor, the running pump is turned off. This setting only pertains to the lower water level sensor.



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INSTALLATION

1) See Figure 1. Clamp the two water sensors to any head pipes in the sump pit, one water sensor above the other with one near the bottom of the pit and one near the top. The bottom water sensor must be mounted *above* all pump intakes and will be used for day-to-day operation; the top one will be used as a backup for high water level sensing. Again, note that when the water is pumped down to the middle of the lower water sensor, the running pump will turn off. If the water rises to the middle of the top water sensor, the controller will cue audible, visual, and any remote alarms.

2) Mount the controller box to the wall in a place where its cord can reach a dedicated 120-volt AC electrical outlet (rated for at least 15 amps), and where the water sensors' and sump pumps' cords can reach the controller box.

3) See Figure 2. Connect the water sensors to the controller box, ensuring that each sensor plugs into its correct connector. The lower sensor plugs into the jack labeled "DIGITAL LEVEL SENSOR" and the higher sensor plugs into the jack labeled "HIGH WATER SENSOR".

4) Plug a pump into the outlet marked "PUMP 1" on the controller box. If there is a second pump, plug it into the outlet "PUMP 2" on the controller box.

5) In the event that the water level reaches the middle of the HIGH WATER SENSOR, audible and visual notifications will be initiated, and the REMOTE ALARM CONTACTS will be electrically opened, allowing external alarm systems (such as a home alarm) to be activated. If the ion Genesis is not to be connected to an external alarm system, proceed to step 6. If connecting a home alarm system to the ion Genesis, make the connection to the RJ-11 jack labeled "REMOTE ALARM CONTACT". The centermost pins (3 and 4) are used for this circuit, and are short-circuited under normal conditions. If water reaches the HIGH WATER SENSOR, an internal relay will electrically break, putting an infinite resistance between pins 3 and 4, notifying the external alarm system.

6) Proceed to the Setup section.

Figure 1

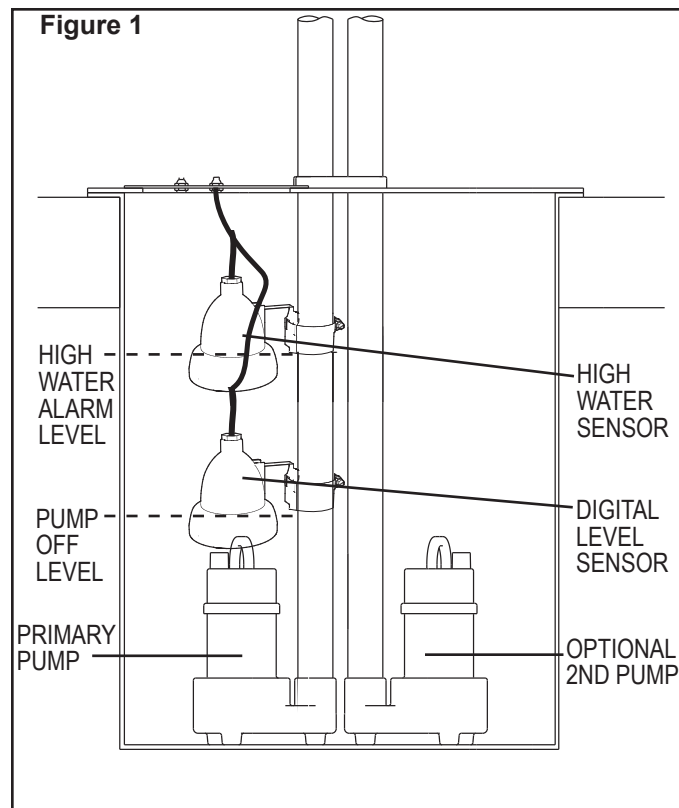
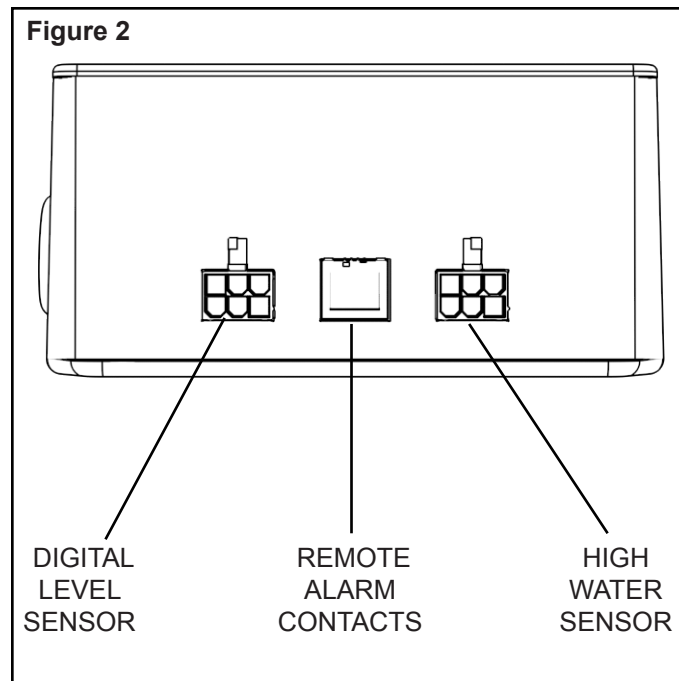


Figure 2



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SETUP

Plug the controller box into the electrical outlet. The controller will automatically sense the connected pumps at this time by running them briefly. If they do not run, push the RESET/TEST button to ensure the controller "counts" each pump plugged into it. (Each pump must run temporarily for it to be counted.) If they still do not run, call for service.

Using the PUMP TURN ON LEVEL buttons, set the desired water level at which the pump should turn on. This level is measured in inches, up from the middle of the lower water sensor ("DIGITAL LEVEL SENSOR", see Figure 1). When the water level is pumped down to the middle of the lower water sensor, the pump is turned off. Note that this setting *only* pertains to the lower water level sensor, and will be retained in memory in the event of a complete power failure.

It is recommended that the system be tested by filling the sump pit with water using a hose. The first pump should turn on and empty the pit of water. If a second pump is installed, filling the pit again should cause the second pump to run.

To test the alarm functions, simply apply gentle pressure with a finger to the underside of the top level sensor (HIGH WATER SENSOR). The controller should cue audible and visual alerts, and engage any alarm dialers and/or external devices that may be connected for remote notification.

OPERATION

The controller will turn a pump on whenever the sump's water level rises above the height that was configured in the Setup section. That pump will be turned off after the water is pumped down to the middle of the lower water sensor (DIGITAL LEVEL SENSOR). If there is a second pump installed, it will be put "on deck" and will be run the next time a pump is called for. This alternation keeps wear even between the pumps over time. Due to residential wiring limits, only one pump will be run at a time by the controller.

Under any of the following conditions, the controller will enter a state of alarm:

- A pump failure has been detected
- The water level reaches the HIGH WATER SENSOR

- A level sensor failure has been detected
- A pump has been continuously running but the water level remains above the DIGITAL LEVEL SENSOR for an extended period of time

Once in an alarm state, the controller will notify the homeowner that there may be trouble by:

- Initiating audible and visual cues
- If the alarm is caused by a high water level, the controller will break (electrically open) the remote alarm contacts, which may be connected to another device installed in the home

Typical Installation



Figure 3



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TROUBLESHOOTING

Symptom	Cause	Measures
Power light not illuminated and display is blank.	Tripped breaker.	Reset breaker.
	Faulty outlet.	Check outlet/wiring.
Pump(s) run but will not pump down water.	Restricted pump or pipe.	Clear pump or pipe.
	Failing pump.	Compare water output to similar pump.
	Bad check valve.	Check for proper operation of check valve.
	High flow.	Pump(s) undersized for incoming water flow, replace with higher capacity pump(s).
Basin empty but pump won't shut off.	The DIGITAL LEVEL SENSOR is mounted too low in the basin.	The lower sensor (DIGITAL LEVEL SENSOR) must be mounted above all pump intakes. Remount sensor higher.
Remote contacts not working.	Faulty wiring.	Use ohmmeter to test continuity of terminals. You should see continuity in normal operation, activate high water alarm - you should measure an open. Consult a qualified electrician for all wiring problems.
Display shows "5 Minute Run Fault".	A pump has been needed for longer than 5 minutes straight. Pump(s) is at least temporarily undersized for incoming water flow, the head pipe is restricted, or a pump is failing.	Watch pit's water level closely, check for any restrictions, or replace pump(s) ensuring that the new pump has proper flow capacity for incoming water flow.
Display shows "Pump Failed To Start".	A pump's electrical current draw is lower than expected.	If the condition occurs for one pump, replace the failing pump. If it occurs when either pump is called for, this may indicate an internal problem with the ion Genesis TM ; call for service.
Display shows "Pump Run Current Failure".	A pump still is running after it has been turned off.	This indicates an internal problem with the ion Genesis TM and requires immediate service to prevent further damage.
Display shows "Trending Fault".	The water level is increasing, even after a pump is turned on. Pump(s) is at least temporarily undersized for incoming water flow, the head pipe is restricted, or a pump is failing.	Watch pit's water level closely, check for any restrictions, or replace pump(s) ensuring that the new pump has proper flow capacity for incoming water flow.
Display shows "Level Sensor Failure".	One of the water level sensors is unplugged or failing.	Unplug then reconnect both water level sensors. If condition persists, replace the failing sensor.
Display shows "High Water".	The water level in the pit has reached the HIGH WATER SENSOR. Either a pump(s) is at least temporarily undersized for incoming water flow, the head pipe is restricted, a pump is failing, or the ion Genesis has an internal problem.	Make sure is a pump running. If not, press the RESET/TEST button, and check again. If still not running, call for service. Otherwise check for any restrictions, or replace pump(s) ensuring that the new pump has proper flow capacity for incoming water flow.
Display shows "High Water Sensor Mode".	The DIGITAL LEVEL SENSOR is unplugged, failing, or plugged into wrong jack.	Unplug then reconnect the DIGITAL LEVEL SENSOR (the lower of the two sensors in the pit) into the <i>correct</i> jack. If condition persists, replace it.



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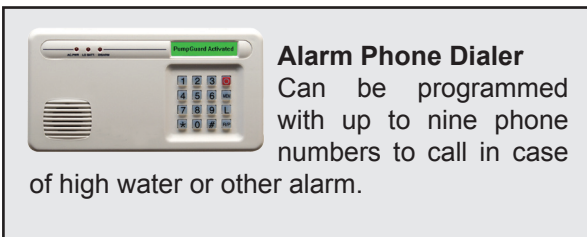
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ACCESSORIES

Increase your protection with the following qualified add-on accessories:



For operation or installation instructions for these accessories, call 1-800-323-1665

SPECIFICATIONS

Voltage:	120 VAC, 60 Hz
Capacity:	15 amp maximum load per pump outlet (1/2 hp)
Standby Power Consumption:	7 W maximum
Remote Alarm Contacts:	Normally closed (Open during alarm state) 30 VAC/DC @ 1A MAX
Temperature Range:	0 °C to 40 °C (32 °F to 104 °F)
Audible Alarm:	80 dB at 10 ft.
Enclosure:	NEMA-1 UL94V-0 Acrylonitrile Butadiene Styrene
Dimensions(sensors):	4.62" x 4.62" mounting straps: 5.25" x 3.50"
Mounting:	Up to #10 screws
Dimensions (controller):	8.260" x 3.940" mounting holes

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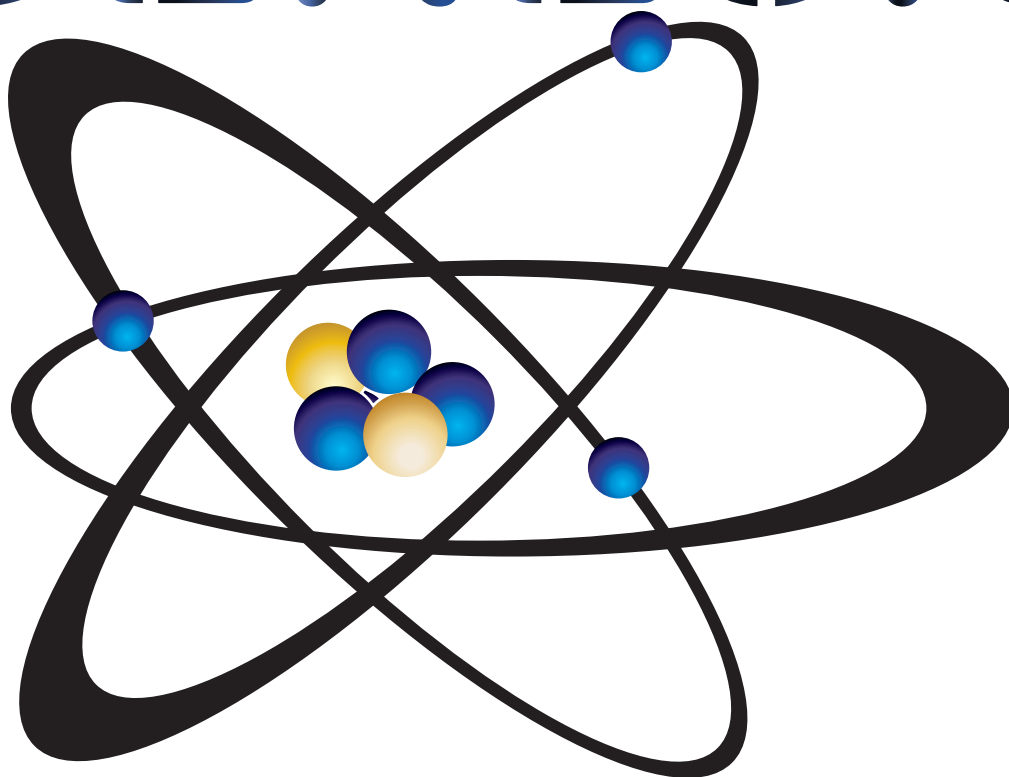
Warranty

1. Coverage and Term. Metropolitan Industries, Inc. ("**Metropolitan**") warrants to the original purchaser (the "Buyer") of each Metropolitan product (the "product"), that any part thereof which proves to be defective in material or workmanship within one (1) year from date of installation or 18 months from the date of manufacture, whichever comes first, will be replaced at no charge with a new or remanufactured part, F.O.B. factory. Buyer shall be responsible for all freight charges and all costs of field labor or other charges incurred in the removal and/or reinstallation of any product, part or component thereof.
2. Exclusions. **THE WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS AND EXCLUSIONS:**
 - (a) The Warranty excludes products or workmanship which becomes defective as a result of: (i) earthquake, fire, storms, the elements or any other acts of God; (ii) normal wear and tear from use; (iii) accident, misuse, abuse or neglect ; (iv) modifications made by Buyer or any third party, other than **Metropolitan**; and (v) Buyer's failure to properly install, maintain, service and/or operate the product under normal conditions and according to manufacturer's instructions.
 - (b) **Metropolitan** shall not be responsible for, and the Warranty shall not cover, extended damage which occurs because of Buyer's failure to notify **Metropolitan** promptly in writing of apparent defects.
 - (c) Any part or component designated as manufactured by anyone other than **Metropolitan** shall be covered only by the express warranty of the manufacturer thereof.
 - (d) The Warranty shall lapse upon Buyer's failure to fully comply with the terms and conditions of its contract with **Metropolitan**, including Buyer's failure to pay the purchase price for the product or any portion thereof. Buyer's subsequent compliance with the terms and conditions of any such contract, will not cause the term of the Warranty to extend beyond the time period set forth above.
 - (e) No actions taken by **Metropolitan** to correct a defect in a product shall extend the Warranty beyond the period set forth above. **Metropolitan** shall not be obligated to remedy any defect, where otherwise required pursuant to the Warranty unless and until Buyer notifies **Metropolitan** in writing of the defect and then only if such notification is made prior to the expiration of the period set forth above.
3. Process of Claims and Repairs. **Metropolitan** agrees that if the product or any part or component thereof shall fail to conform to the terms of this Warranty, **Metropolitan** shall replace such nonconforming product, part or component at the original point of delivery and furnish instruction for its disposition. Any transportation charges involved in such disposition and all costs of field labor or other charges incurred in the removal and/or reinstallation of any product, part or component thereof shall be the responsibility of Buyer.
4. Limitation on Liability. Notwithstanding any provision to the contrary, **Metropolitan's** entire liability under this Warranty shall not in the aggregate exceed, and Buyer's exclusive and sole remedies are, to the extent permitted by law, shall be to secure replacement of the defective product. **UNDER NO CIRCUMSTANCES SHALL METROPOLITAN BE LIABLE UNDER THE WARRANTY FOR ANY INDIRECT, PUNITIVE, SPECIAL, EXEMPLARY, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING LOST PROFITS, REVENUE, USE OR ECONOMIC ADVANTAGE).**
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6. Not Transferable. The Warranty may not be transferred and shall be void on the sale or other transfer of the product.
7. Products and Warranty Subject to Change. **Metropolitan** reserves the right to make revisions to its products and their specifications, and to revise this Warranty and related information without notice.

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