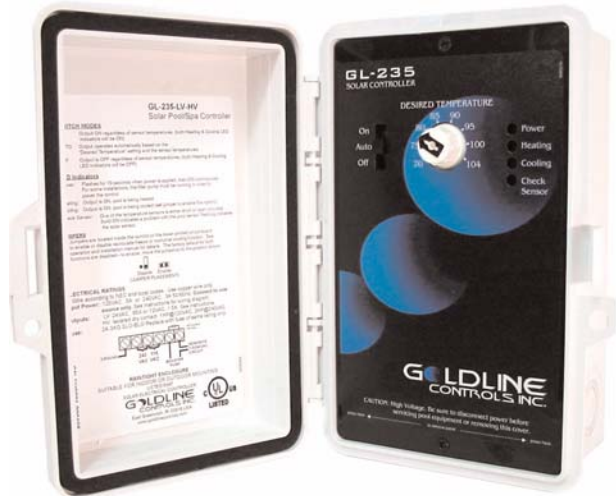


# GL-235

Solar Pool Heating Control



- Automatically Maximizes Solar System Heat Collection
- Precise Calibrated Temperature Setting Dial
- Single Model Handles all Systems-Old or New Pools, Spas, 12 or 24VAC Actuators.
- Automatic Switch Over from Solar Heating to Nocturnal Cooling if Desired
- Standard 120/240 VAC 50/60 Hz. Input & 12 and 24 VAC Output
- Goldline's Proven Reliability and Performance
- Goldline Combo (GLC) is GL-235 LV or GL-235 LV-HV Control, Diverter Valve, Actuator & Sensors

## AMERICA'S #1 BEST SELLING SOLAR CONTROLLER

### Description

The GL-235 is designed to meet the need for easy installation, dependable operation, and serviceability. The GL-235 incorporates unique, microprocessor based construction to ensure reliability and accurate performance. The GL-235 offers advanced operating features to provide differential temperature control, selectable high limit, programmable recirculation freeze protection, nocturnal cooling and optional booster pump control.

**AUTOMATIC HEATING:** If the collectors are warmer than the pool water by 4° or more, and the pool is below the selected desired temperature, the valve will rotate allowing heat collection. This heat collection will stop when the solar sensor falls to within 1.5°F of the pool temperature or the pool temperature exceeds the "desired temperature" set on dial.

**AUTOMATIC COOLING:** (Field selectable option) If the collectors are cooler than the pool water by 6°F or more, and the pool is above the selected desired temperature, the valve will rotate allowing cooling via the solar collectors. The heat dissipation will stop when the collectors rise within 3°F of the pool temperature or the pool temperature is lowered below the set desired temperature.

**SINGLE SETTING FOR DESIRED TEMPERATURE:** The GL-235 logic is set by a single dial adjustment with the desired pool/spa temperatures clearly indicated. The dial is calibrated with the temperatures from 70°F to a high of 104°F for quick and easy, user-friendly operation. The temperature set indicates set pool/spa temperature, and the GL-235 will automatically determine if the water should be solar heated or cooled, thus maximizing the system capabilities.

**TERMINAL STRIP CONNECTIONS:** For input power, and sensor inputs. Controls also have industry standard 3 pin connectors for both forward and reverse valve actuator operation and screw terminal connectors.

**LED INDICATORS:** Show the status of the system operation, Four highly visible LED's show 1) power to the control, 2) power output directing valves and/or pump to collect heat (heating), 3) power output directing valves and/or pump to dissipate heat (cooling), 4) sensor fault indicator shows sensor(s) not operating properly.

**GL-235 VALVE OUTPUT:** Rating is the industry standard 24 VAC. A jumper switches the output to 12VAC for compatibility with older valve actuators. Output is fuse protected.

**RECIRCULATION FREEZE PROTECTION:** (field selectable operation) turns the GL-235 output ON, directing warmer pool/spa water through the collectors when near freezing temperatures are reached at the collector sensor. The GL-235 will allow recirculation when the collector temperature rises to 42°F. Two 10K Ohm sensors are required for operation. One or more freeze snap switches are recommended if freeze recirculation protection is utilized. *Important--see installation instructions before using Recirculation Freeze.*

**SYSTEM TEST SWITCH:** Allows the user to manually override the automatic function of the GL-235 and verify operation.

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# GL-235

## Solar Pool Heating Control

### Model GL-235-LV-HV

The model GL-235-LV-HV has two outputs: 1) Selectable low voltage output for 12/24 VAC valve actuator. Wire via 3 pin connectors or terminal block (compatible with older actuators). 2) Isolated contact, high voltage output for 120/240 VAC booster pump or time clock override. Order sensors and freeze snap switches separately.

### Model GL-235-LV

The GL-235-LV is similar to the GL-235-LV-HV, but has a low voltage output only.

### Temperature Sensors

All Goldline temperature sensors are 10K Thermistors which are accurate to +/- 1/2°F. The sensors are double-dip potted in silicone for maximum protection from moisture.

**PC:** Multi-purpose sensor that can be used for both Solar (surface mount) or Pool/Water (drill-in plastic piping).

**SC-1/4:** Brass screw-in sensor with 1/4" NPT pipe thread. Screws directly into drain plug on the pump strainer basket.

### Freeze Snap Switches

Goldline recommends the use of one or more freeze snap switches to be wired in series with the solar sensor if the recirculate freeze protection feature is being used. Both snap switch models operate identically, however, the GC-1 is designed to meet the highest aerospace & military specifications.

**GC-1:** Opens at 44° +/- 4°F, closes at 54° +/- 5°F (premium)

**GC-2:** Opens at 44° +/- 4°F, closes at 54° +/- 5°F (standard)

### 3 Year Limited Warranty\*

Goldline Controls offers a 3 year limited warranty on all solar controls and accessories. This warranty covers the repair or replacement of the control at no cost for the first 3 years.

\*SEE WARRANTY STATEMENT FOR COMPLETE DETAILS.

### Service You Can Count On

Visit [www.goldlinecontrols.com](http://www.goldlinecontrols.com), or call (888) 921-7665 to speak with a qualified technical support representative. Our technicians can assist you in selecting the correct controls and sensors for your system and help troubleshoot any problems after installation.

### Goldline Combo (GLC)

The "GLC" package contains everything required to automatically control most solar pool heating systems. The "GLC" provides the industry's #1 best selling control, valve, actuator, and sensors together in one box. The "GLC" makes inventory control easier, ensures all parts arrive at the job site, and components remain protected in factory-fresh condition. The Goldline "GLC" consists of the GL-235-LV or GL-235-LV-HV control, a 24 VAC actuator, a valve (see chart) and 2 sensors (see chart). For GLC with the GL-235-LV-HV control add HV after GLC in Model number.

MODEL	VALVE	SENSORS
GLC-1P-A	1.5"/2" positive seal valve	2 PC sensors
GLC-1P-B	1.5"/2" positive seal valve	1 PC sensor, 1 SC-1/4 sensor
GLC-2P-A	2"/2.5" positive seal valve	2 PC sensors
GLC-2P-B	2"/2.5" positive seal valve	1 PC sensor, 1 SC-1/4 sensor
GLC-2NP-A	2"/2.5" non-positive seal valve	2 PC sensors
GLC-2NP-B	2"/2.5" non-positive seal valve	1 PC sensor, 1 SC-1/4 sensor

(HV-add HV after the GLC to make combo with GL-235-LV-HV)

### Specifications

**Power:** 105-130VAC, .5A 50/60Hz.  
or  
192-250VAC, .3A 50/60Hz.

**Output:** Low Voltage  
12/24VAC, 20VA, 1.7/.85A  
3 pin connectors for both forward and reverse operation  
Model GL-235-LV-HV also has terminal block connections

**GL-235-LV-HV only:**  
SPST-NO isolated contact  
115VAC, 1 HP  
240VAC, 2 HP

**Sensors:** 2 required-thermistor, 10K @ 25°C/77°F. (snap switches recommended if recirculate freeze protection is used)

**On differential:** 4°F

**Off differential:** 1.5°F

**High Limit:** 70-104°F selectable via calibrated scale

**Recirculate freeze:** on at 40°F, off at 42°F

**Nocturnal cooling:** On when collector 6°F less than pool **and** pool hotter than high limit, off when collector 3°F less than pool **or** pool cooler than high limit