# GS501SZ Hot Sheet

## Balboa Instruments
### System PN 55248-01

System Model # GS5-GS501SZ-RCA-2.0K
Software Version # 36
EPN # 2141

Base PCBA – PN 55319
PCB GS500Z – PN 22015 Rev A

Base Panels
VL600S – PN 54547
VL701S (Serial Standard) – PN 51057




Balboa Instruments Incorporated

Template used: 40599_E.pdf 05/09/2007
55248-01_97_A.pdf 06/11/2007

# Basic System Features and Functions

## Power Requirements

- 230VAC, 50Hz, 1~, 16A or 32A
- 3 wires (line, neutral, ground)

## System Outputs

### Setup 1 (As Manufactured)

- 230V Pump 1, 2-Speed
- 230V Blower
- 230V Ozone *
- 10V Spa Light
- 230V AV (Stereo)
- 230V 2.0kW Heater **

### Optional Devices

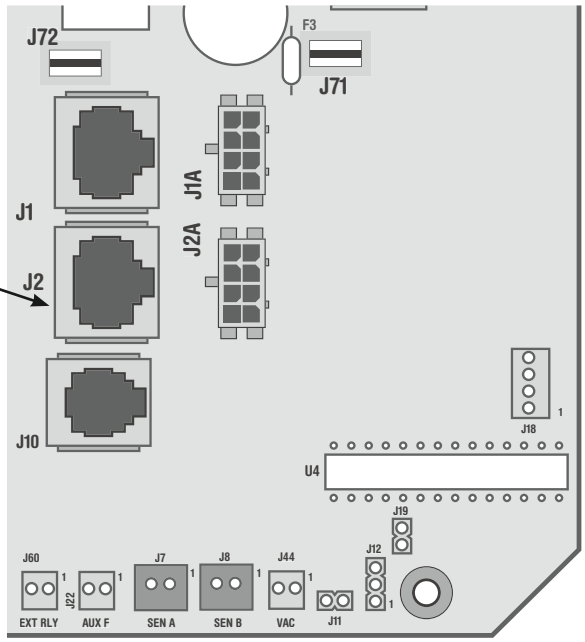
- 230V Circ Pump *

* Ozone and Circ Pump must be same voltage.

** Heater wattage is rated at 230V.

## Additional Options

- Full Feature Dolphin Remote
  and Spa-only Dolphin Remote
- IR Receiver Module
  Connects to terminal J1 or J2
  (Must be 8-pin connector)
- MoodEFX Lighting
  Connects to Spa Light terminal J20
- FiberEFX Lighting
  Connects to Spa Light terminal J20



# Basic System Features and Functions

Any time you change a DIP Switch, other than A1, you must reset Persistent Memory for your new DIP Switch Settings changes to take effect. If you do not reset Persistent Memory, your system may function improperly.

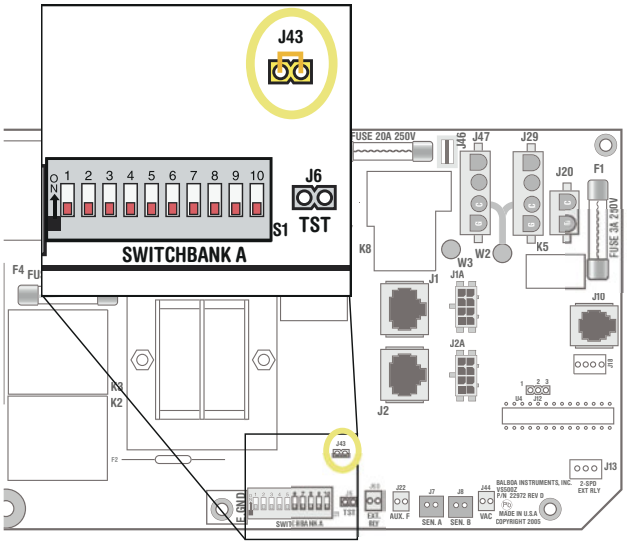
## To reset Persistent Memory:

- Power down by disconnecting power source from spa.
- Put a jumper on across J43, covering both pins. (See illustration below)
- Power up by connecting power source to spa.
- Wait until "Pr" is displayed on your panel.
- Power down again.
- Remove jumper from J43 (May also move to cover 1 pin only)
- Power up again.

## About Persistent Memory and Time of Day Retention:

This system uses memory that doesn't require a battery to store a variety of settings. What we refer to as Persistent Memory stores the filter settings, the set temperature, and the heat mode.

Persistent Memory is not used for Time of Day. Only models with a Serial Deluxe panel installed (VS5xxDZ and GS5xxDZ) can display the time. However, during power loss to the spa, the system will lose the correct time, and reset to 12:00 PM when power is restored.




J43 on VS5xxZ and VS300 Series Main Board Shown.
J43 on GS5xxZ Series is located in approximately the same position.

## Power Up Display Sequence

Upon power up, you should see the following on the display:

- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 67 38, that is a VS511SZ at version 38.
- Displayed next is: "24" (indicating the system is configured for a heater between 3 and 6 kW) or "12" (indicating the system is configured for a heater effectively* between 1 and 3 kW).
  "24" should appear for all VS models running at 240VAC.
  "12" should appear for all VS models running at 120VAC, as well as all GS models. (*A heater which is rated at 4 kW at 240VAC will function as a 1 kW heater at 120VAC.)
- "Pr" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the Reference Card for the VS or GS System model of your spa for information about how the spa operates from this point on, including how to adjust the Time of Day if using a Serial Deluxe style panel.

# Wiring Configuration and DIP Settings

## Setup 1 (As Manufactured)

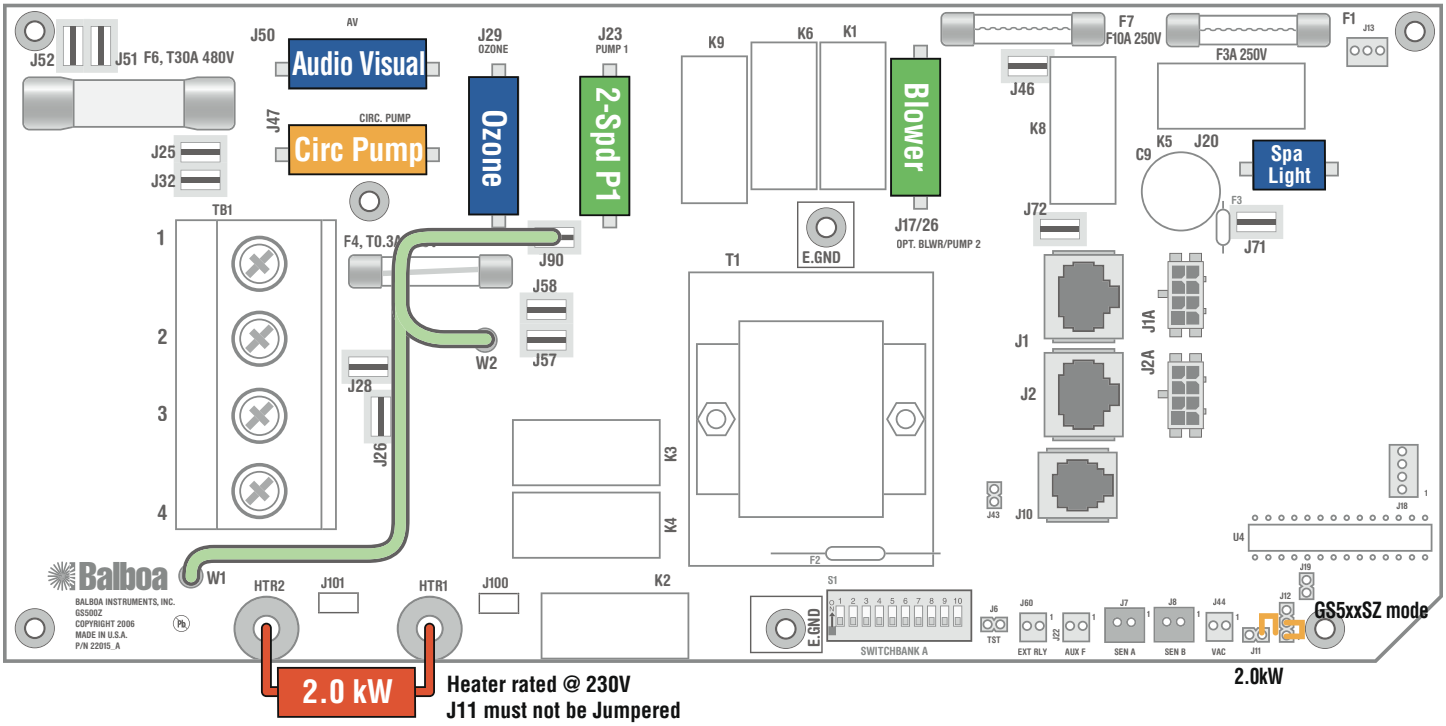
- 230V Pump 1, 2-Speed
- 230V Blower
- 10V Spa Light
- 230V Ozone
- 230V A\V (Stereo)
- 230V 2.0kW Heater
- VL600S or VL701S Main Panel
- 230V Circ Pump (Optional)

**HiPot Testing Note:**

Disconnect slip terminal with green wires from J90 prior to performing HiPot test. Failure to disconnect may cause a false failure of the test.

Reconnect terminal to J90 after successful completion of HiPot test.

**DIP switch A9 must be ON if Circ Pump is installed.**

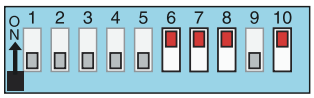



Heater rated @ 230V
J11 must not be Jumpered

**WARNING:** Main Power to system should be turned OFF BEFORE adjusting DIP switches.
**WARNING:** Persistent Memory (J43) must be RESET to allow new DIP switch settings to take effect. (See Persistent Memory page)

**SSID #**
100
65
36

**Switchbank A**




A1, Test Mode OFF
A2, Generic Panel layout
A3, Off-board Pump disabled
A4, Aux Freeze
A5, NA when A9 is OFF
A6, 50 Hz
A7, J17/26 Enabled
A8, Degrees C
A9, Circ Pump OFF
A10, Low Amp mode

J11
2.0kW Heater

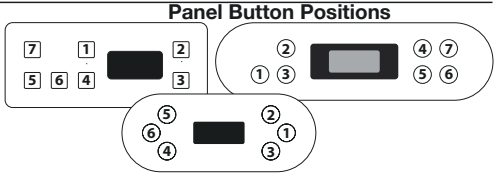
GS500/501/510SZ Software
J12
3
2
1

J43 Memory Reset

**Panel Button Assignments**

1=Mode
2=Temp Up
3=Temp Down
4=Light
5=Pump 1
6=J17/26
7=Unused

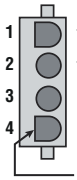
**Panel Button Positions**




**Wiring Color Key**

- Neutral (Common) AC Connections
- Special AC Connections
- Line AC Connections
- 10 Volt Connections
- Relay Control Wires

**Board Connector Key**



1 Typically Line voltage
2 Typically Line voltage for 2-speed pumps
3 Neutral (Common)
4 Ground

Note flat sides in connector

# DIP Switches and Jumpers Definitions

## SSID 100 65 36 Base Model GS500SZ-GS501SZ-GS510SZ

**DIP Switch Key**

A1 Test Mode (normally OFF)
A2 "ON" position: Long Serial Standard panel (customer specific)
"OFF" position: Generic Balboa Serial Standard panel layout
A3 "ON" position: off-board pump enabled *
"OFF" position: off-board pump disabled
A4 Aux Freeze (must be OFF)
A5 Disabled when A9 is OFF
"ON" position: Two-speed pump 1
"OFF" position: One-speed pump 1 (A9 must be On and a Circ Pump installed)
A6 "ON" position: 50Hz operation
"OFF" position: 60Hz operation
A7 "ON" position: J17/26 equipment enabled *
"OFF" position: J17/26 equipment disabled
A8 "ON" position: temperature is displayed in degrees Celsius
"OFF" position: temperature is displayed in degrees Fahrenheit
A9 "ON" position: 24 Hour Circ Pump with 3ºF shut off, Ozone runs with Circ Pump
"OFF" position: no Circ Pump, Ozone runs with Pump 1-low during filter cycles only
A10 "ON" position: heater is disabled while any high-speed pump or blower is running (low amperage mode)
"OFF" position: heater can run while any/all high-speed pumps or blowers are running (high amperage mode)

* Panel with button layout is not compatible when both A3 and A7 are ON.

**Jumper Key**

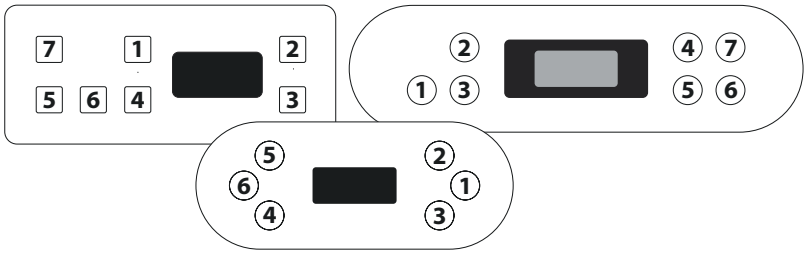
**J11** If using 3kW or higher wattage heater, jumper can be set in either position, but may perform better on Pins 1 and 2.
If using 2.5kW or lower wattage heater, jumper must be set on 1 Pin only.

**J12** **Factory set. DO NOT MOVE.**
Jumper must be on Pins 1 and 2 for GS51xZ/GS5xxSZ/GS5xxDZ software.
Jumper must be on Pins 2 and 3 for GS50xZ software.

**J43** When jumper is placed on 2 pins during power-up, system will reset persistent memory.
Leave on 1 pin only to enable persistent memory feature.

**WARNING:**
- Setting DIP switches incorrectly may cause abnormal system behavior and/or damage to system components.
- Refer to Switchbank illustration on Wiring Configuration page for correct settings for this system.
- Contact Balboa if you require additional configuration pages added to this hot sheet.

Panel Button Positions (A2 must be OFF)




Panel Button Assignments (A2 must be OFF)

**1=Mode**
**2=Temp Up**
**3=Temp Down**
**4=Light**
**5=Pump 1**

| | A7:OFF | A7:ON |
|---|---|---|
| A3:OFF | **6=Unused**<br>**7=Unused** | **6=J17/26**<br>**7=Unused** |
| A3:ON | **6=Pump 2**<br>**7=Unused** | **6=Pump 2**<br>**7=J17/26** |

Aux Panel Information

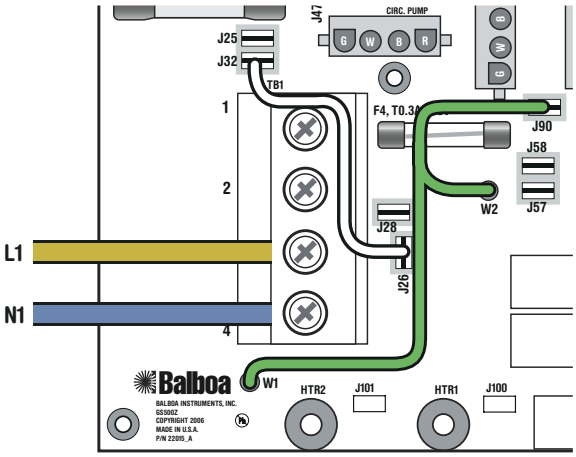
Supports 2-button aux panel

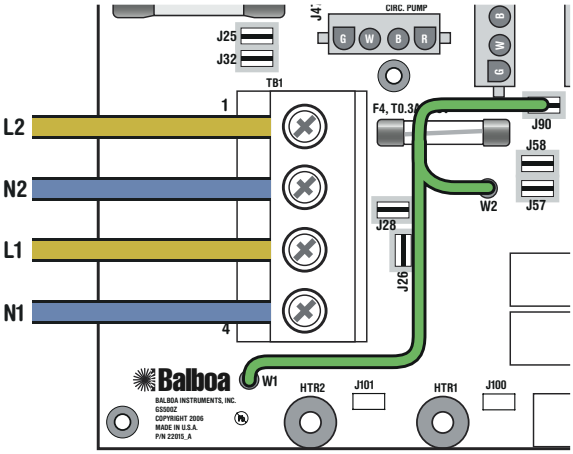
VX20 [5] [6]

Supports 4-button aux panel (A2 must be OFF)

VX40S [5] [6] [7] [4]

# Electrical Service Configuration Options




## Single Service (1 x 16 Amp or 1 x 32 Amp)

<u>This option is configured and shipped as the default.</u>
*All equipment (pumps, blower, and heater) runs on service line L1.*

Systems using only 1 DIP switch (A10) for heat disable:

For 1 x 16 Amp Service:
DIP Switch A10 must be ON.

For 1 x 32 Amp Service:
Set DIP Switch A10 such that total system amperage draw never exceeds rated service input.

Systems using multiple DIP switches for heat disable:
Refer to system Hot Sheet DIP Switch Definition page and set the switches shown in Table 1 such that total system amperage draw never exceeds rated service input.

## Dual Service Option (2 x 16 Amp)

*The heater runs on service line L1, while all other equipment, such as pumps and blowers, run on service line L2.*

Completely remove the white wire from J26 and J32.
*Note: J32 and J25 are electrically identical. The white wire may be attached to either terminal before removal.*

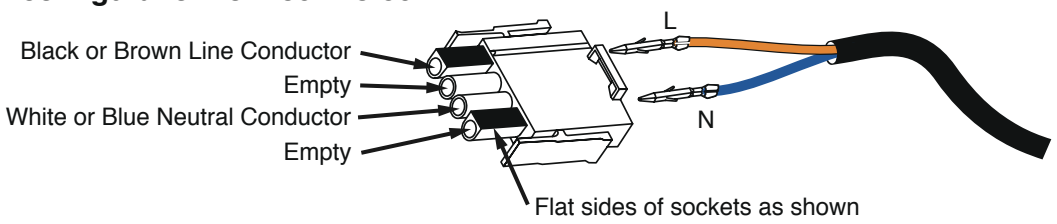
Systems using only 1 DIP switch (A10) for heat disable:
DIP Switch A10 must be OFF.

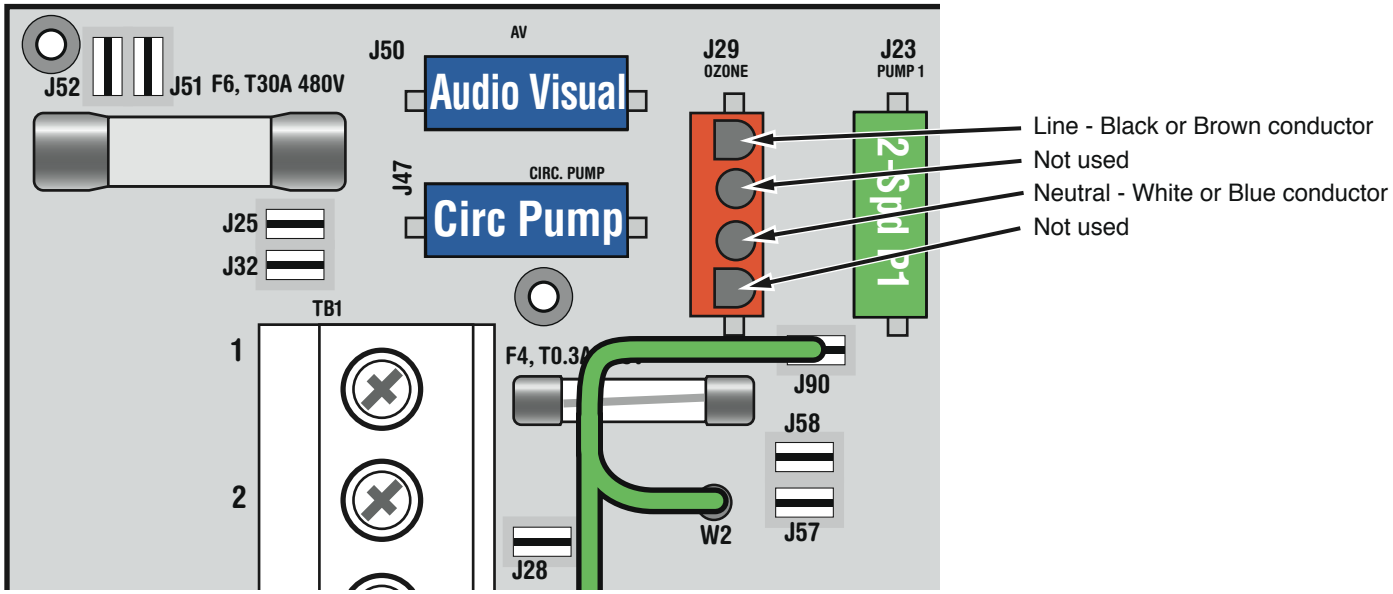
Systems using multiple DIP switches for heat disable:
Refer to system Hot Sheet DIP Switch Definition page and set both switches shown in Table 1 to ON positions.

# Ozone Connections

*Note: A special tool is required to remove the pins from the connector body once they are snapped in place. Check with your Balboa Account Manager for information on purchasing a pin-removal tool.*

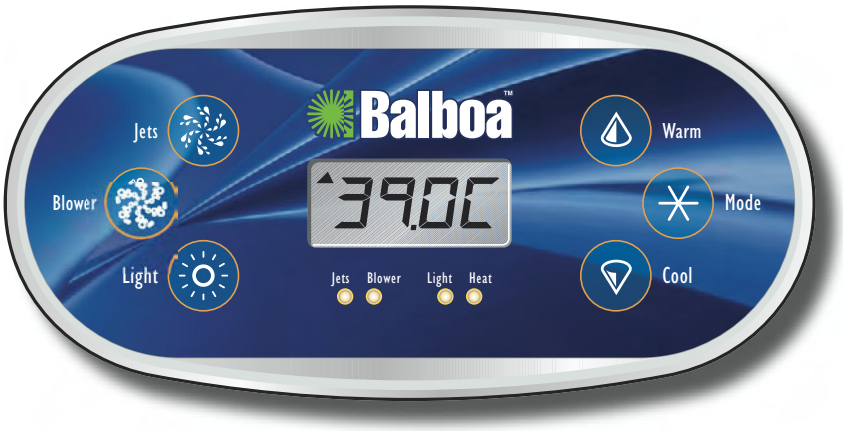
**Balboa Ozone connector configuration for 230VAC 50Hz:**



# Serial Standard Panel Configurations

SETUP 1




VL600S
PN 54547 with Overlay PN 11773
• Connects to Main Panel terminal J1
• Not compatible with fully-equipped GS510SZ
or with GS503/504/514SZ




VL701S (Serial Standard)
PN 51057 with Overlay PN 10328
• Connects to Main Panel terminal J1