

VS504SZ Tech Sheet

Balboa Instruments System PN 55370-01

System Model # VSP-VS504SZ-DCAJ

Software Version # 43

EPN # 2808

Base PCBA - PN 54638-01

PCB VS500Z - PN 22972 Rev C or D

Base Panels

VL701S (Serial Standard) – PN 52298-01



System Revision History

System PN	EPN	Date	Requested By	Changes Made
55370-01	2808	08.27.2008	Balboa	Software update to version 43.

Basic System Features and Functions

Power Requirements

- 240VAC, 60Hz, 40A, Class A GFCI-protected service (Circuit Breaker rating = 50A max.)
- 4 wires [hot, hot, neutral, ground]

System Outputs

Setup 1 (As Manufactured)

- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 240V Ozone *
- 12V Spa Light
- 120V AV (Stereo)
- 240V 4.0kW Heater **

Optional Devices

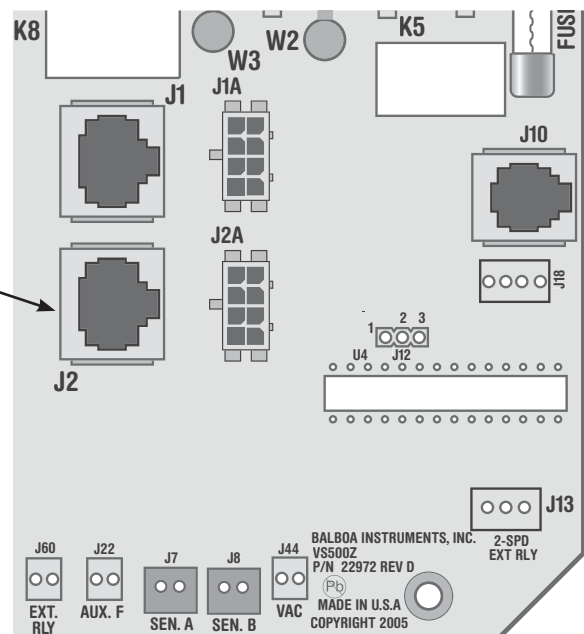
- 240V Circ Pump *

* Ozone and Circ Pump must be same voltage.

** Heater wattage is rated at 240V. When running 120V to heater, output is approximately 25%.

Additional Options

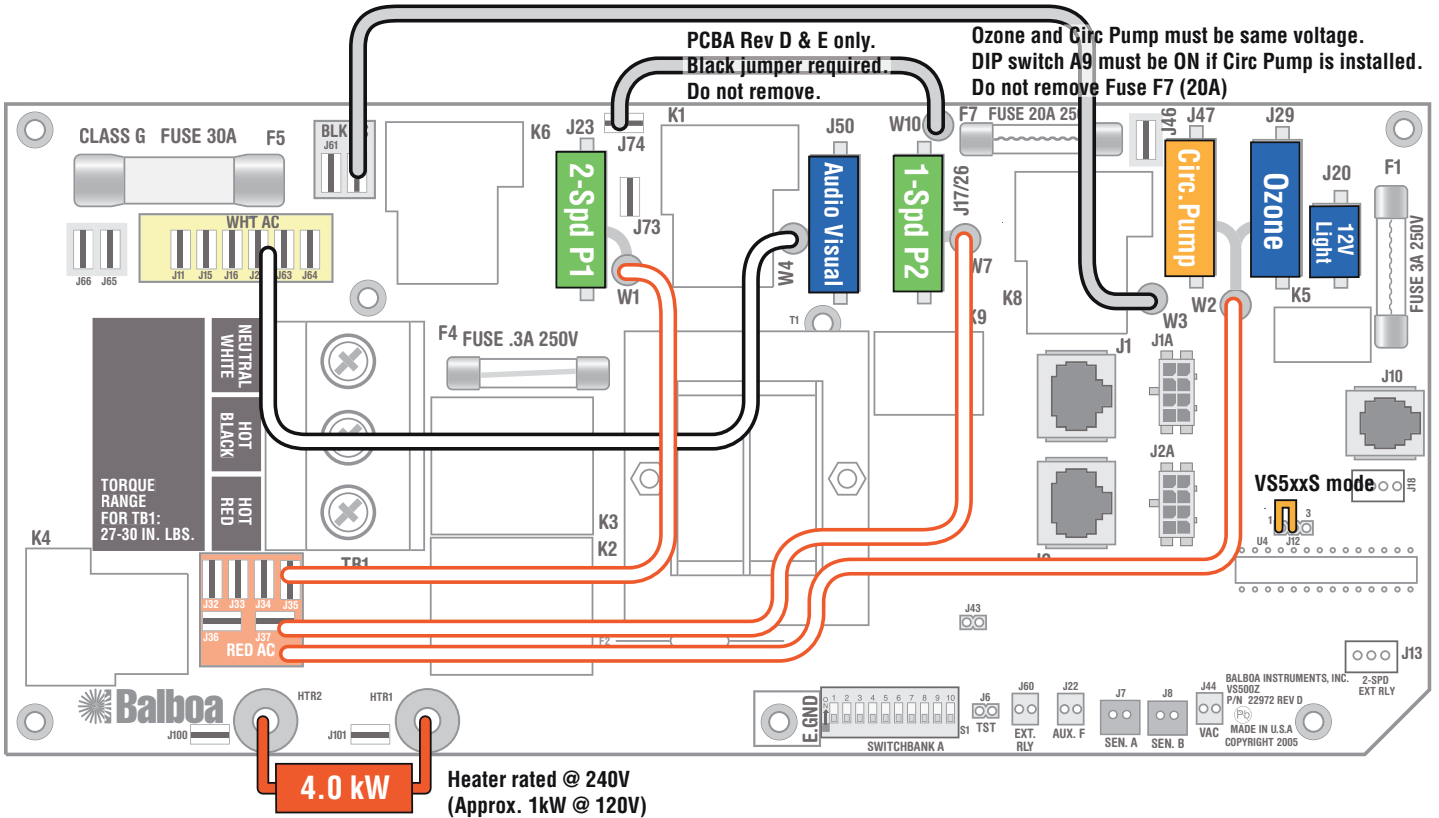
- Full Feature Dolphin Remote and Spa-only Dolphin Remote
- IR Receiver Module
Connects to terminal J1 or J2
- MoodEFX Lighting
Connects to Spa Light terminal J20
- FiberEFX Lighting
Connects to Spa Light terminal J20



Wiring Configuration and DIP Settings

Setup 1 (As Manufactured)

- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 240V Circ Pump (opt)
- 240V Ozone
- 12V Spa Light
- 120V AV (Stereo)
- 240V 4.0kW Heater
- VL701S Main Panel



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
93
43

Switchbank A

A1, Test Mode OFF	A6, 60 Hz
A2, See Table 1	A7, Exp Board Equip Disabled
A3, J17/26 Pump Enabled	A8, Degrees F
A4, Aux Freeze	A9, Non-Circ Mode
A5, 2-speed P1	A10, See Table 1

Wiring Color Key

- 120 Volt Connections
- 240 Volt Connections
- Black AC Jumpers
- 12 Volt Connections
- Relay Control Wires

Panel Button Assignments

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

Panel Button Positions

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 93 43

Base Model VS503SZ-VS504SZ-VS514SZ

DIP Switch Key

- A1 Test Mode (normally OFF)
- A2+A10 Control amp draw requirements (See Table 1)
- A3 "ON" position: J17/26 Enabled for 1-speed Pump only.
"OFF" position: J17/26 Disabled.
- A4 Aux Freeze (must be OFF)
- A5+A9 Pump 1 speeds and Circ Modes:

A5	A9	Circ Mode	Pump 1 Speed
OFF	OFF	Non-circ	2-speed
ON	OFF	Circ "acts like Pump 1 low" (filters/polls/ect)	1-speed
OFF	ON	24 hours with 3°F shut-off	1-speed
ON	ON	24 hours with 3°F shut-off	2-speed

- A6 "ON" position: 50Hz operation
"OFF" position: 60Hz operation
- A7 "ON" position: Expander Board Enabled for Blower or 1-speed Pump.
"OFF" position: Expander Board Disabled
- A8 "ON" position: temperature is displayed in degrees Celsius
"OFF" position: temperature is displayed in degrees Fahrenheit

When using a Blower, use X-B expander board. When using a 1-speed Pump 3, use X-P or X-P231, depending on amperage requirements.

* Panel with button layout  is not compatible.

Table 1

		# of Hi-Speed Pumps/Blower Before Heat Disabled
A2	A10	
OFF	OFF	0
ON	OFF	1
OFF	ON	2
ON	ON	3

Jumper Key

J12 Factory set. DO NOT MOVE.

Jumper must be on Pins 1 and 2 for VS51xZ/VS52xZ/VS5xxSZ/VS5xxDZ software.

Jumper must be on Pins 2 and 3 for VS50xZ software.

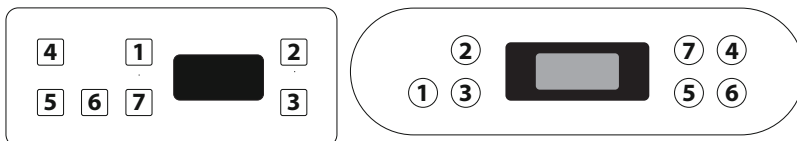
J43 When jumper is placed on 2 pins during power-up, system will reset persistent memory.

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 tech sheet.

Panel Button Positions



Panel Button Assignments

- 1=Mode
- 2=Temp Up
- 3=Temp Down
- 4=Light
- 5=Pump 1
- 6=Pump 2 (when A3 is ON)
- 7=Exp Board (when A7 is ON)

Aux Panel Information

Supports 2-button aux panel



Supports 4-button aux panel



Serial Standard Panel Configurations

SETUP 1



VL701S (Serial Standard)
PN 52298-01 with No Overlay (Example shown)
• Connects to Main Board terminal J1*

* Panels with back-lighting (bulbs installed) should never be plugged into J2. Use J1 only.
If the backlight bulbs are removed, then both J1 and J2 may be used.