

PRODUCT SPECIFICATIONS

SC-MP-P12-P21-CP-O-H2.0-LS-JJM-CE-GE1

SPA PACK PART #: 0202-201023
SOFTWARE #: 9936-100666

FOR:

GECKO ALLIANCE INC

BY:

GECKO ALLIANCE INC

DOCUMENT NO. SP789A

1 REVISIONS

Rev	Description	Date	Written by
A	Taken from specification SP498. First release to create an entry level SSPA pack for the European distribution market.	4 Mars 2008	Louis-Philippe Legare

2 APPROVALS

Rev: _____

(Customer)

(Account Manager)

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4 WARNING FOR SPA CONTROLS

-   The temperature sensor must be installed in order to read the water temperature properly. Improper installation of the sensor can cause overheating or insufficient heating of the water. The spa manufacturer must verify if the temperature measured by the sensor is the same as the actual water temperature and that the sensor cannot be affected by external conditions (ex: air temperature).
-  This control is not suitable and cannot be used for gas heater applications.
-  This control must always be connected to a circuit protected by a ground fault interrupter.
-  Install the control on a solid surface to minimize mechanical vibrations.
-  The power input cable should always be secured in place with a proper strain relief.
-  A notice should be installed by the manufacturer on the finished product to notify the end user to always check the water temperature with his hand before entering the water so as to prevent burns and other injuries which may result from improper water temperatures.
-  This control should not be installed in the proximity of highly flammable materials.
-  The electrical load of connections to this control must not exceed the ratings specified by Gecko Electronique Inc. Failure to ensure compliance with proper electrical load specifications may cause hazardous operating conditions and/or decreased the life span of the control.
-  Use copper wiring only.
-  This control is certified by Gecko Electronique Inc. to be used in Europe only. If product is to be used outside of Europe, it is the spa OEM's responsibility to make sure the pack complies with the standards and functions adequately in this country.

-  This control is certified as a component only. The finished product which will incorporate this control should be certified by the proper agency as a finished product. In no circumstances should the fact that the control is certified as component be considered sufficient for the finished product to comply with certification requirements. The manufacturer is solely responsible for ensuring that the finished product complies with all applicable laws and regulations.
-  Ambient air temperature in the vicinity of the control location should not exceed the maximum temperature rating specified by Gecko Electronique Inc.
-  The spa elements, containing water exposed to cold air (piping, pumps, valves, etc...) must be approximately at the same ambient temperature as the power module of the control to prevent adequately from water freezing.
-  This control should be serviced by qualify personnel only.
-  If a fuse must be replaced, it should be replaced only with a fuse of the same type and rating.
-  The control must not be altered or modified in any way.
-  Do not connect any equipment to this control other than equipment and/or accessories that are specified or approved by Gecko Electronique Inc. for each output.
-  This control should always be installed with the proper orientation as per the specifications provided by Gecko Electronique Inc.
-  Do not create any opening in the control.
-  Do not extend temperature sensor cables.
-  This control must be installed as specified in the Gecko Electronique Inc. product certification report.
-  It is possible that an output fails in the “on” position. Make sure that this cannot create any hazard.

-  The spa water must not exceed 50°C when thermal equilibrium is attained while the spa accessories (pump, blower...) are at maximum flow rate and the heater is off.
-  The user manual must specify that if the keypad is physically damaged, the end user must not use the finished product and the keypad should be replaced immediately.
-  Do not submerge the temperature probe completely in water. Only the stainless steel portion should be in contact with water.
-  This product is provided with a pre-calibrated pressure switch. Make sure that the pressure switch setting is adequate for your application.

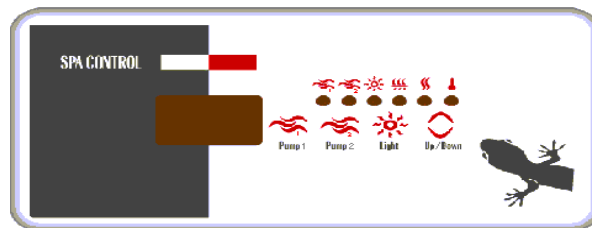
SHOULD YOU HAVE ANY QUESTION WITH RESPECT TO ANY OF THE FOREGOING OR THE REFERENCE MATERIALS MENTIONED HEREIN, PLEASE CONTACT US.

5 FUNCTIONALITY

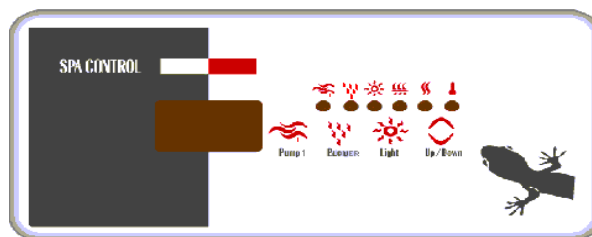
The type of keypad, 4 x keys (K-9, K-18 or K-19) or 6 x keys (K-35), is configured via jumper #2

5.1 4x Keys

5.1.1 Keypad two pumps or single pump and blower system



K-18-AD-GE2



K-18-AD-GE3

5.1.2 Pump #1 switch

Sequence	Low	High	Off
Arrow	Blink	On solid	Off
Default	20 min	20 min	---

Note1: If we are in a Smart Winter cycle (pump running in high speed) and this key is pressed, the cycle will be cancelled and the pump will go into its next state (Low-High-Off)

5.1.3 Pump #2 / Blower switch

Sequence	On	Off
Arrow	On	Off
Default	20 minutes	

Note1: If we are in a *Smart winter cycle* (pump is running in high speed) and this key is pressed, the cycle will be cancelled and the pump will go into its next state (On-Off)

Note4: Can be deactivated via jumper #4

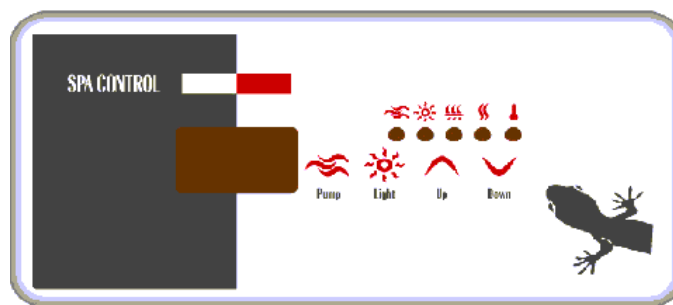
5.1.4 switch

Sequence	On	Off
Arrow	On	Off
Default	2 hours	

5.1.5 Up/Down switch

Functionality	Increase/Decrease set point		
Sequence	1 st Press	Subsequent Presses	Holding Key
Display	Spa Set Point	Will Increase or Decrease Set Point by 0.5°C (1°F)	Will Increase or Decrease Set Point automatically by 1°F (0.5°C (1°F))
Limit	N/A	59 to 104°F (15 to 40 °C)	59 to 104°F (15 to 40 °C)
Default	100°F (38°C)		
Display	Set point icon. On when key is pressed & for 5-seconds after key has been released.		

5.1.6 Keypad Single pump system



K-18-AD-GE1

5.1.7 Pump #1 switch

Sequence	Low	High	Off
Arrow	Blink	On solid	Off
Default	20 min	20 min	---

Note1: If we are in a Smart Winter cycle (pump running in high speed) and this key is pressed, the cycle will be cancelled and the pump will go into next state (Low-High-Off)

5.1.8 switch

Sequence	On	Off
Arrow	On	Off
Default	2 hours	

5.1.9 Up key

Functionality	Displays & Increases set point		
Sequence	1st Press	Subsequent Presses	Holding Key
Display	Spa Set Point	Increases Set Point by 1°C	Increases Set Point automatically by 1°C
Limit	N/A	40°C	40°C
Default	38°C		
Arrow	Set point arrow (pointing on thermometer). On when key is pressed & for 5-seconds after key has been released.		

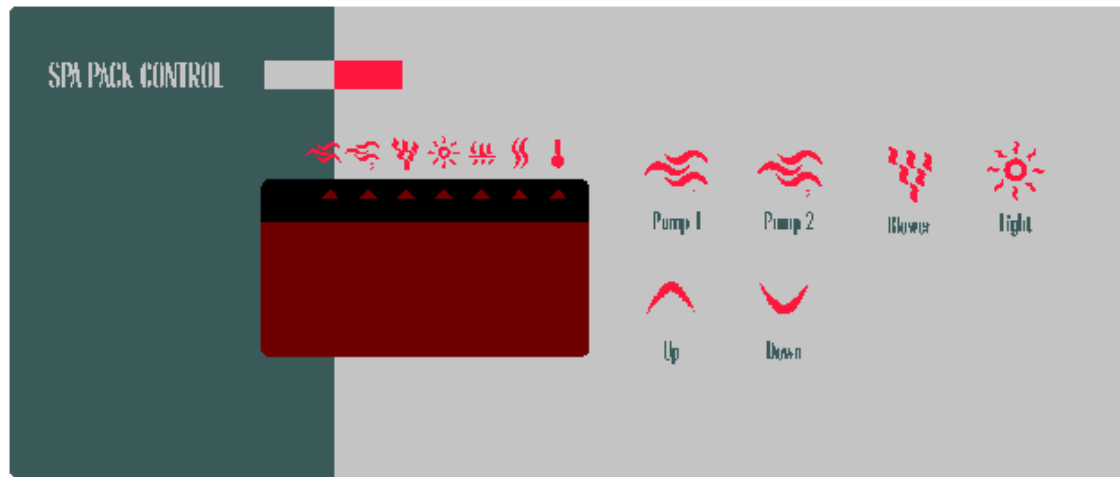
Note: The system will turn the heater on when the temperature reaches the set point minus 1°C and will keep heating until it reaches the set point plus 1°C.

5.1.10 Down key

Functionality	Displays & Decreases set point		
Sequence	1st Press	Subsequent Presses	Holding Key
Display	Spa Set Point	Decreases Set Point by 1°C	Decreases Set Point automatically by 1°C
Limit	N/A	15°C	15°C
Default	38°C		
Arrow	Set point arrow (pointing on thermometer). On when key is pressed & for 5-seconds after key has been released.		

5.2 6x Keys

5.2.1 Keypad



K-35-SL-GR-ADB-GE1

5.2.2 Pump #1 switch

Sequence	Low	High	Off
Arrow	Blink	On solid	Off
Default	20 min	20 min	---

Note1: If we are in a Smart Winter cycle (pump running in high speed) and this key is pressed, the cycle will be cancelled and the pump will go into its next state (Low-High-Off)

5.2.3 Pump #2 switch

Sequence	On	Off
Arrow	On	Off
Default	20 minutes	

Note1: If we are in a *Smart winter cycle* (pump is running in high speed) and this key is pressed, the cycle will be cancelled and the pump will go into its next state (On-Off)

Note4: Can be deactivated via jumper #4

5.2.4 Blower switch

Not used

5.2.5 switch

Sequence	On	Off
Arrow	On	Off
Default	2 hours	

5.2.6 Up Arrow switch

Functionality	Displays & Increases set point		
Sequence	1st Press	Subsequent Presses	Holding Key
Display	Spa Set Point	Increases Set Point by 0.5°C	Increases Set Point automatically by 0.5°C
Limit	N/A	40°C	40°C
Default	38°C		
Arrow	Set point arrow (pointing on thermometer). On when key is pressed & for 5-seconds after key has been released.		

Note: The system will turn the heater on when the temperature reaches the set point minus 1°C and will keep heating until it reaches the set point plus 1°C.

5.2.7 Down key

Functionality	Displays & Decreases set point		
Sequence	1st Press	Subsequent Presses	Holding Key
Display	Spa Set Point	Decreases Set Point by 1°C	Decreases Set Point automatically by 1°C
Limit	N/A	15°C	15°C
Default	38°C		
Arrow	Set point arrow (pointing on thermometer). On when key is pressed & for 5-seconds after key has been released.		

6 OTHER FEATURES

6.1 High-limit error

Functionality	Heater turned off when High Limit (HL) probe temperature reaches 119°F (48°C)
Duration	Until the temperature at HL probe falls below 111°F (44°C) and power is reset.
Display	Solid HL

6.2 Filter Cycle Suspension

Functionality	Suspends filtration if a key is pressed.
Duration	Until 40 minutes after last pump, blower, light, times out or is turned off.
Arrow	Filter arrow blinks.

6.3 Overtemp protection during filter cycle

Functionality	Suspends filter cycle if water temp. exceeds set point by more than 2°F (1°C) for 3 hours.
Duration	For the remainder of the filter cycle
Arrow	Filter arrow or logo blinks.

6.4 Overtemp error

Functionality	Turns the heater and all outputs off when the water temperature reaches 112°F (44.4°C). The only things that will still work during an overtemp error will be the smart winter mode and all the keys that do not start the accessories.
Duration	Until the water temperature cools down to 109°F (43°C).
Display	Flashing OH alternating with water temperature

6.5 Pressure switch error

Functionality	Turns the heater off when there is a flow problem.
Duration	Until flow problem is resolved
Display	FLO / FLC

6.6 Filter Cycle

Functionality	If there is no circulation pump, the filter cycle consists of starting up pump #2 or the blower for 1 minute to purge the plumbing, then pump #1 low speed is turned on for the rest of the cycle. If there is a circulation pump, pump #1 high and pump #2 or the blower are turned on for 1 minute to purge the plumbing. Then the circulation pump is turned on for the rest of the cycle.	
Sequence	Press & hold Light switch for 5 sec.	2nd press on light switch
Display & Settings	“xx” Use up & down keys to set filter ON duration (0 to 12)	The data will be saved and user will start immediately a new filter cycle & return to main display.
Default	The default filtration cycle start 12 hours after a power up and has a 12 hours duration if the circulation pump is enabled, if not the default duration is 2 hours.	
Arrow	On when filter mode is on	

6.7 Ozone Output

6.7.1 Without circulation pump

Functionality	The ozone will be on during the filter cycle
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6.7.2 With circulation pump

Functionality	The ozone will follow the circulation pump.
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6.8 Circulation Pump

Functionality	The circulation pump is on during the filter cycle and when there is a call for heat. When the temperature is 2°F above the set point for more than 3 hours, the circulation pump will be turned off (see Overtemp protection during filter cycle).
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Note: The circulation pump is configured via jumper #3

6.9 Smart Winter mode

Functionality	The Smart Winter Mode consists of starting all the pumps for one minute at various intervals based on the ambient temperature under the spa skirt.		
	Temperature under spa skirt (Tskirt), taken at 6" from the spa pack.	Danger Level	Cycle every...
	Tskirt > 41 °F	None	n/a
	32 °F < Tskirt < 41 °F	Low	2 hours
	26.6 °F < Tskirt < 32 °F	Medium	1 hour
	23 °F < Tskirt < 26.6 °F	High	30 minutes
	Tskirt < 23 °F	Severe	15 minutes
Duration	This protective mode will be on for a minimum of 24 hours		
Logo or arrow	Filter arrow or logo blinks.		

6.10 Power-Up detection

Display	Blinks after a power failure until a key is pressed
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Note: This feature is to let the user know that a power failure has occurred and that the spa pack has returned to its default values.

6.11 Temperature sensor failure

Functionality	Turns the heater off when the temperature probe is out of range
Duration	Until unit reads a temperature between 32°F and 122°F.
Display	PRR

Note: This error is not checked during the first hour after a power-up to let the heater work when filling the spa with very cold water.

6.12 Temperature unit

Functionality	Hold Light switch for 10 seconds and the temperature unit will toggle from °F to °C.
Duration	At power up, temperature unit default is °C.

6.13 Panel Lock

6.13.1 Minor panel lock

Functionality	Hold Pump #1 (or Pumps) switch 5-sec. to lock / unlock all keys except pumps, blower, light
Duration	Until a power up occurs, or Pump #1 (or Pumps) switch is held for 5-seconds.
Display	LoP when key is pressed

6.13.2 Major panel lock

Functionality	Hold Pump #1 (or Pumps) switch 10-seconds to lock all keys.
Duration	Until power is re-set or Pump #1 (or Pumps) switch is held for 5-seconds.
Display	LoF when key is pressed

6.14 Cool Down

Functionality	When the heater is turned off, the pump#1 low speed (or circulation pump if enabled) keeps running for 30 seconds in order to cool down the heater element.
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6.15 Heater Management

Functionality	When the water temperature is 1 °C lower than the set point, the heater will come on until the water temperature reaches the set point plus 1 °C.
Logo or Icon	The Heater arrow on the display will blink when the system calls for heat and will come on solid when the heater is actually turned on.

Note: High current AC supply: There are no restrictions to the Heater output.

Low current AC supply: The Heater is not allowed to be turned on if a Pump is on at High speed.

7 Jumper Configuration

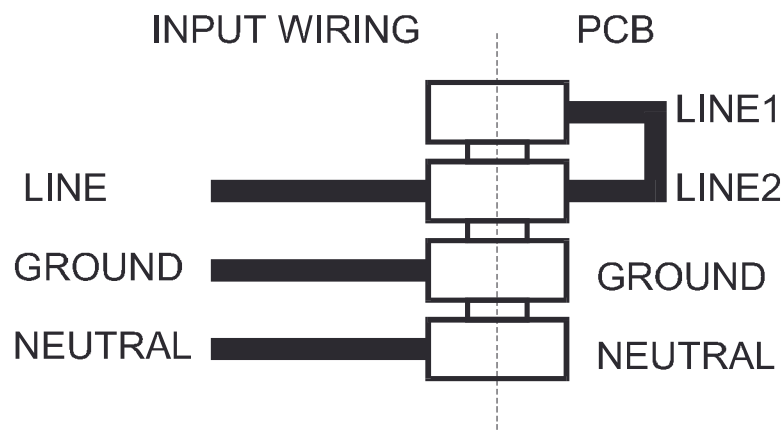
Jumper Number	Function	Position 1 (Left)	Position 2 (Right)
JMP-1	Input Current	High current (HC)	Low Current (LC)
JMP-2	Keypad selection	TSC-19 (4 keys)	TSC-35 (6 keys)
JMP-3	Circulation pump	Not installed	Installed
JMP-4	Pump #2/Blower	Not installed	Installed

Note1: Factory Default values in bold

Note2: If the circulation pump is disabled, the pressure switch will be monitored in regards with pump #1

8 Input VAC Wiring

1x 240 VAC (single-phase) (32A or 16A breaker circuit)



9 PERFORMANCES

9.1 Applicable standards

EN 60 335-1	Safety of household and similar electrical appliances
EN 55104, IEC 1000-4-2, IEC 1000-4-4, IEC 1000-4-5, IEC 1000-4-6, IEC 1000-4-11	Immunity test regulations
EN 55014	Emission tests regulation
TUV and CE marking	European Standards

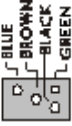
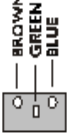
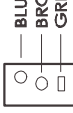
9.2 Environmental Ratings

Humidity:	Up to 80% non-condensing.
Maximum operate ambient	50 °C
Maximum high-limit temperature	50 °C
Maximum regulation temperature	40 °C
Temperature precision:	Better than 0.57 °C, averaged on 8 readings



9.3 Electrical Ratings & connections

	Ratings:	Connector:	Gecko's Part #	Wires	Functions
Power Input:	230 Vac, 50 Hz, 32A	WECO – 327-FU-HDS/04-W	210CA0093	P10-1 P10-3&4 P10-2	Neutral Line Ground

Outputs:	Ratings:	Connector:	Gecko's Part #	Wires	Functions
Pump #1:	230 Vac, 9 FLA, 30 LRA	JJM: 	5-50-7009	P14: Black P12: Brown P7: Blue P4: Green	Low Speed High Speed Neutral Ground
Pump #2 / Blower	230 Vac, 9 FLA, 30 LRA	JJM: 	5-50-7011	P11: Brown P9: Blue P6: Green	Line Neutral Ground
Ozone	230 Vac, 2 Amp	JJM: 	5-50-7008	P16: Brown P8: Blue P5: Green	Line Neutral Ground
Circulation pump:	230 Vac, 2 Amp	JJM 	5-60-7096	P16: Brown P32: Blue P01: Green	Line Neutral Ground
Heater:	230 Vac, 8.5 Amp (2.0 kw)	Screws	530AA0485	P21 P17	Line Com
Light:	12 Vac, 1A		9920-400178	P22: Black P23: White	12 Vac 0 Vac





9.3.1 Low voltage connections

ID	Description	Connector type	Use for	Mating cable	
				Gecko's Part #	Description
P29	Main top side control	8 pin male, series MTA-100	K-9, K-18, K-19, K-35	0202-007153	K-9-CE
				0202-007142	K-18-CE
				0202-007184	K-19-CE
				0202-007146	K-35-CE
P24 P25	Flow switch input	3 pin male, series MTA-100	Flow input	5-60-7303	Cable flow switch 5"
P30	Regulation temperature probe	4 pin male, series MTA-100	Regulation probe	9920-400346	CABLE+PROBE TEMP THERMISTORE 10 FT
P27	High-limit temperature probe	JST, 2 position	High limit	5-60-7265 	Temp probe high limit in poron (Thermistor)