

in.link



ingenious waterproof plugs & connectors

TechBook

Gives a whole new meaning
to plug and play!



Aeware
by gecko





Table of contents

warning	2
overview	3
features	
- general	4
- latch snap effect	4
- watertight design UL & CE	4
- keying adaptor	5
- 120 or 240 voltage	5
pin out	6
selection guide (UL/CSA models)	7
selection guide (CE models)	11
accessories	16
specifications	17

These connectors are covered by US Patent #6,929,516.



WARNING

IN.LINK CONNECTORS MUST BE ORDERED FOR THE CORRECT VOLTAGE AND CURRENT RATINGS OF THE DEVICE THAT WILL BE CONNECTED WITH IT.

INCORRECT USE AND/OR INSTALLATION (I.E. INSTALLING A CONNECTOR WIRED FOR 240V ON A 120V POWERED DEVICE) CAN LEAD TO DEVICE FAILURES AND POSSIBLY DANGEROUS SITUATIONS.

MAKE SURE IN.LINK CONNECTORS ARE ALWAYS USED WITHIN THEIR SPECIFIED RATINGS (ELECTRICAL AND ENVIRONMENTAL).

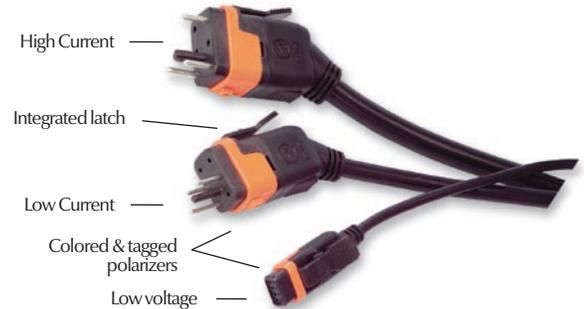


in.link

Very cool plugs and connectors with colored and tagged polarizers.

In.link are very cool output and input plugs and connectors that come with colored and tagged polarizers designed to make sure all devices used with spas and hot tubs are well connected and at their right place. In.link connectors come in 3 sizes (HC, LC, low voltage) for all types of output and input devices. They all include an integrated latch that maintains them in place and provides audible and tactile feedback when in.links are properly seated.

They have also the definite advantage of reducing SKU numbers and inventory levels by giving OEMs and dealers total flexibility to easily configure output devices.





High Current



Low Current

General

The in.link connector system was designed to meet the requirements of the hot tub and the whirlpool market but its application can extend beyond these two applications.

The high voltage connectors can be divided in two different families: one for High Current and one for the Low Current. Both families are similar, only the size of the connector is different. In this document, unless otherwise stated, information applies to both connector families.



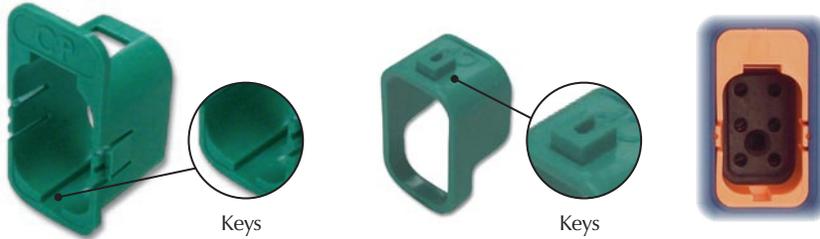
Latch snap effect & strain relief

A latch mechanism is provided to maintain male and female connectors together. The tab provided on the male part gives the operator an audible and tactile feedback at the insertion of the cable in the female part. Once the latch is engaged, it will prevent both parts from separating unintentionally by vibration or shock. To unplug the male connector, a gentle press on the tab will allow the release of the locking mechanism to separate both parts.



Watertight design UL & CE

The female connector comes with a built-in seal ensuring a watertight connection assembly sealed from moisture and water ingress. This sealing is intended to be suitable for the CE standards and the demanding spa environment.



Keying adaptor

A keying adaptor is installed on the male and female connectors to prevent the connection of equipment into the wrong connector. Each keying adaptor has its unique key code located on its edge, as well as unique colors and identification. The key code was designed to receive the male keying adaptor with the matching key code. The keying is also provided with a unique color coded and engraved identification on the front surface.

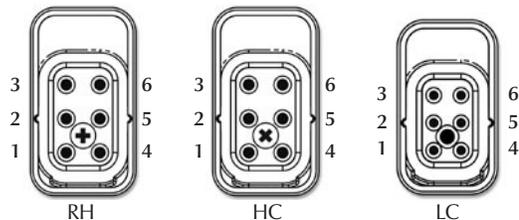
This helps reduce inventory and also SKU numbers. For example, the same cable can be used for Pump 1, Pump 2 and Pump 3. During the final steps of spa assembly, the correct keys are added to the corresponding cables, just before plugging into the pack.

120V/240V

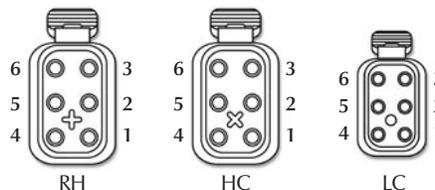
Use 120V or 240V accessories without modifying spa pack, and eliminate wiring diagrams at the same time! The 6-pin female pack connector will safely accept all male types without any modifications, and thus ensure correct voltages to device.



Female connector on Spa Pack



Cable male connector



Pin description

The female connector always has up to 6 pins, which allows the possibility of connecting either 120V or 240V devices without any changes to the spa pack.

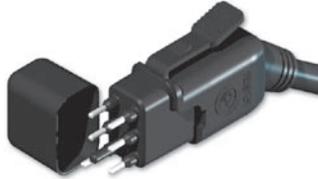
Each receptacle has two outputs, A and B, powered by two different relays. For example, on a two-speed pump, the high speed winding would be connected to output A, and the low-speed winding to output B. Output A is also available on two different pin contacts: a high-current rated and a low-current rated pin. The table (opposite) shows the current limitations for each output (both A-high and A-low outputs and the B output) for both connector types (HC and LC).

Note that not all pin outputs are necessarily supported on a given spa pack output. Refer to spa pack specifications for details on each output.

Pin	Function	Model			
		HC-x-15	HC-x-20	LC-x-5	LC-x-10
1	Common (240V loads)				
2	Output A (low-current rated)	15 A		5 A	
3	Output A (high-current rated)		20 A		10 A
4	Ground				
5	Common (120V loads)				
6	Output B	15 A	15 A	5 A	5 A

Note: RH cables are Not orderable, as they come pre-installed with in.therm heaters.

Note: Always refer to product ID label on Spa Pack for maximum allowed Current Ratings.



Cable Low Current 48"

in.link connectors

In.link connectors are easily and conveniently accessible from the front of the spa pack offering a wide range of possible connection configurations. In.link connectors come in 3 sizes (HC, LC and low voltage) for all types of input and output devices.

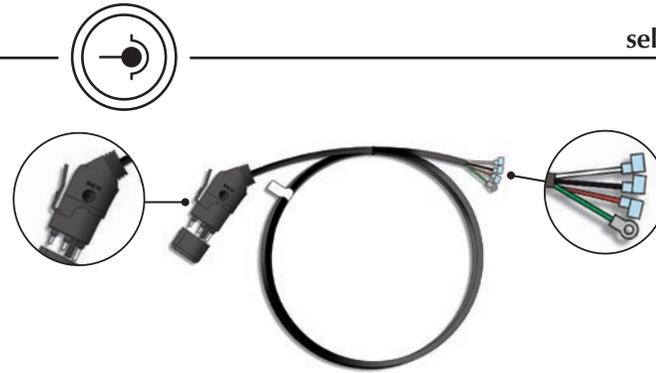
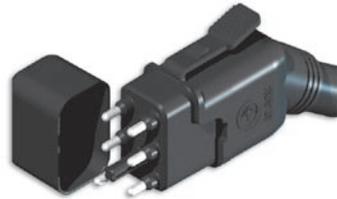
Choose the connectors you need from the table below.

J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
Cable LC 48"										
LC-1-5-120-4	Cable in.link LC 1S 5A 120V 4FT	single output loads up to 4 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	48"	—	Black	—	Green	White	—
LC-1-5-240-4	Cable in.link LC 1S 5A 240V 4FT	single output loads up to 4 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	48"	White	Black	—	Green	—	—
LC-2-5-120-4	Cable in.link LC 2S 5A 120V 4FT	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	48"	—	Black (color wheel)	—	Green	White	Red (light)
LC-2-5-240-4	Cable in.link LC 2S 5A 240V 4FT	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	48"	White	Black (color wheel)	—	Green	—	Red (light)



Cable Low Current 96"

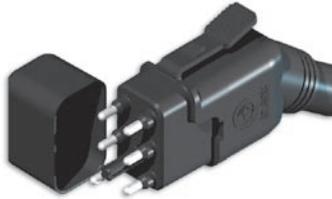
J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
Cable LC 96"										
LC-1-5-120-8	Cable in.link LC1S 5A 120V 8FT	single output loads up to 4 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	96"	—	Black	—	Green	White	—
LC-1-5-240-8	Cable in.link LC1S 5A 240V 8FT	single output loads up to 4 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	96"	White	Black	—	Green	—	—
LC-2-5-120-8	Cable in.link LC2S 5A 120V 8FT	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	96"	—	Black (color wheel)	—	Green	White	Red (light)
LC-2-5-240-8	Cable in.link LC2S 5A 240V 8FT	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	96"	White	Black (color wheel)	—	Green	—	Red (light)



Cable High Current 48"

J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
Cable HC 48"										
HC-1-15-120-4-T	Cable in.link HC 1S 15A 120V 4FT T	single-speed pump or blower, up to 15FLA, quick-connect and ring termination	14/3	48"	—	Black	—	Green	White	—
HC-1-15-240-4-T	Cable in.link HC 1S 15A 240V 4FT T	single-speed pump or blower, up to 15FLA, quick-connect and ring termination	14/3	48"	White	Black	—	Green	—	—
HC-1-20-240-4-T	Cable in.link HC 1S 20A 240V 4FT T	single-speed pump or blower, up to 20FLA, quick-connect and ring termination	12/3	48"	White	—	Black	Green	—	—
HC-2-15-240-4-T	Cable in.link HC 2S 15A 240V 4FT T	dual-speed pump up to 15FLA, quick-connect and ring termination	14/4	48"	White	Black (High-speed)	—	Green	—	Red (Low-speed)
HC-2-20-240-4-T	Cable in.link HC 2S 20A 240V 4FT T	dual-speed pump up to 20FLA, quick-connect and ring termination	12/4	48"	White	—	Black (High-speed)	Green	—	Red (Low-speed)

Termination: Non-insulated ring terminal (#10 stud) for ground conductor, non-insulated right-angled (flag) 0.250" quick-connects for all other conductors.



Cable High Current 96"

J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
Cable HC 96"										
HC-1-15-120-8-T	Cable in.link HC 1S 15A 120V 8FT T	single-speed pump or blower, up to 15FLA, quick-connect and ring termination	14/3	96"	—	Black	—	Green	White	—
HC-1-15-240-8-T	Cable in.link HC 1S 15A 240V 8FT T	single-speed pump or blower, up to 15FLA, quick-connect and ring termination	14/3	96"	White	Black	—	Green	—	—
HC-1-20-240-8-T	Cable in.link HC 1S 20A 240V 8FT T	single-speed pump or blower, up to 20FLA, quick-connect and ring termination	12/3	96"	White	—	Black	Green	—	—
HC-2-15-240-8-T	Cable in.link HC 2S 15A 240V 8FT T	dual-speed pump up to 15FLA, quick-connect and ring termination	14/4	96"	White	Black (High-speed)	—	Green	—	Red (Low-speed)
HC-2-20-240-8-T	Cable in.link HC 2S 20A 240V 8FT T	dual-speed pump up to 20FLA, quick-connect and ring termination	12/4	96"	White	—	Black (High-speed)	Green	—	Red (Low-speed)



All 240V cable models are available in CE approved wire colors.

J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
Cable LC 48"										
LC-1-5-240-4-CE	Cable in.link LC 1S 5A 240V 4FT CE	single output loads up to 4 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	48"	Blue	Brown	—	Green/ yellow	—	—
LC-2-5-240-4-CE	Cable in.link LC 2S 5A 240V 4FT CE	dual-output loads up to 4 FLA (fiber box, etc.)	18/3	48"	Blue	Brown (color wheel)	—	Green/ yellow	—	Black (light)
Cable LC 96"										
LC-1-5-240-8-CE	Cable in.link LC 1S 5A 240V 8FT CE	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	96"	Blue	Brown (color wheel)	—	Green/ yellow	—	Black (light)
LC-2-5-240-8-CE	Cable in.link LC 2S 5A 240V 8FT CE	dual-output loads up to 4 FLA (fiber box, etc.)	18/4	96"	Blue	Brown (color wheel)	—	Green/ yellow	—	Black (light)
Cable HC 48"										
HC-1-15-240-4-T-CE	Cable in.link HC 1S 15A 240V 4FT T CE	single-speed pump or blower, up to 15FLA, quick- connect and ring termination	14/3	48"	Blue	Brown	—	Green/ yellow	—	—
HC-1-20-240-4-T-CE	Cable in.link HC 1S 20A 240V 4FT T CE	single-speed pump or blower, up to 20FLA, quick- connect and ring termination	12/3	48"	Blue	—	Brown	Green/ yellow	—	—



All 240V cable models are available in CE approved wire colors.

J&J P/N	Description	Typical use	Cable	Length	Pin out (Pin No)					
					1	2	3	4	5	6
HC-2-15-240-4-T-CE	Cable in.link HC 2S 15A 240V 4FT T CE	dual-speed pump up to 15FLA, quick-connect and ring termination	14/4	48"	Blue	Brown (High-speed)	—	Green/yellow	—	Black (Low-speed)
HC-2-20-240-4-T-CE	Cable in.link HC 2S 20A 240V 4FT T CE	dual-speed pump up to 20FLA, quick-connect and ring termination	12/4	48"	Blue	—	Brown (High-speed)	Green/yellow	—	Black (Low-speed)
Cable HC 96"										
HC-1-15-240-8-T-CE	Cable in.link HC 1S 15A 240V 8FT T CE	single-speed pump or blower, up to 15FLA, quick-connect and ring termination	14/3	96"	Blue	Brown	—	Green/yellow	—	—
HC-1-20-240-8-T-CE	Cable in.link HC 1S 20A 240V 8FT T CE	single-speed pump or blower, up to 20FLA, quick-connect and ring termination	12/3	96"	Blue	—	Brown	Green/yellow	—	—
HC-2-15-240-8-T-CE	Cable in.link HC 2S 15A 240V 8FT T CE	dual-speed pump up to 15FLA, quick-connect and ring termination	14/4	96"	Blue	Brown (High-speed)	—	Green/yellow	—	Black (Low-speed)
HC-2-20-240-8-T-CE	Cable in.link HC 2S 20A 240V 8FT T CE	dual-speed pump up to 20FLA, quick-connect and ring termination	12/4	96"	Blue	—	Brown (High-speed)	Green/yellow	—	Black (Low-speed)



Gecko P/N	Description	Use
9917-100983	Male connector LC assembly blank	to cover unused LC output, easy to remove



Gecko P/N	Description	Use
9917-100957	Dust cap LV	to cover unused LV output, easy to remove

Waterproof field removable cap (accessories)

To help minimize inventory and SKU numbers, waterproof caps are available. If certain I/O's are not used on a particular spa model, the female connector must be plugged-in to maintain the waterproof feature of the pack. These caps are easy to insert and remove, and feature the same locking tabs as the male connector to ensure a perfect seal. Future field upgrades of the spa are thus easier.



Gecko P/N	Description	Use
9917-100980	Male connector HC assembly blank	to cover unused HC output, easy to remove



Cable Key Low Current

Gecko P/N	Description	Use
9917-100894	Keying Cable LC - BL - blue	LC Keying for Blower cable
9917-100895	Keying Cable LC - CP - green	LC Keying for Circulation Pump cable
9917-100898	Keying Cable LC - O3 - gray	LC Keying for Ozone cable
9917-100897	Keying Cable LC - FB - violet	LC Keying for Fiber Box cable
9917-100892	Keying Cable LC - A1 - red	LC Keying for Auxiliary 1 cable
9917-100893	Keying Cable LC - A2 - yellow	LC Keying for Auxiliary 2 cable
9917-100896	Keying Cable LC - DI - orange	LC Keying for Direct 120/240 cable

Polarizer choice by the spa manufacturer

Use the following tables to determine the correct cable and spa pack polarizers for your spa application. Note that there are also “blank” keys available to plug unused outputs.



Cable key High Current

Gecko P/N	Description	Use
9917-100888	Keying Cable HC -P1- orange	HC Keying for Pump 1 cable
9917-100887	Keying Cable HC - P2 - violet	HC Keying for Pump 2 cable
9917-100890	Keying Cable HC - P3 - green	HC Keying for Pump 3 cable
9917-101152	Keying Cable HC - P4- yellow	HC Keying for Pump 4 cable
9917-101154	Keying Cable HC - P5- Grey	HC Keying for Pump 5 cable
9917-100889	Keying Cable HC - BH - blue	HC Keying for Blower cable



Enclosure key High Current

Gecko P/N	Description	Use
9917-100909	Keying Enclosure HC - RH - red	HC Keying for Remote heater enclosure connector
9917-100906	Keying Enclosure HC - P1 - orange	HC Keying for Pump 1 enclosure connector
9917-100907	Keying Enclosure HC - P2 - violet	HC Keying for Pump 2 enclosure connector
9917-100908	Keying Enclosure HC - P3 - green	HC Keying for Pump 3 enclosure connector
9917-100153	Keying Enclosure HC - P4 - yellow	HC Keying for Pump 4 enclosure connector
9917-100155	Keying Enclosure HC - P5 - grey	HC Keying for Pump 5 enclosure connector
9917-100904	Keying Enclosure HC - BH - blue	HC Keying for Blower enclosure connector
9917-100905	Keying Enclosure HC - blank - black	HC Keying blank for enclosure connector



Enclosure key Low Current

Gecko P/N	Description	Use
9917-100912	Keying Enclosure LC - BL - blue	LC Keying for Blower enclosure connector
9917-100914	Keying Enclosure LC - CP - green	LC Keying for Circulation pump enclosure connector
9917-100917	Keying Enclosure LC - O3 - gray	LC Keying for Ozone enclosure connector
9917-100916	Keying Enclosure LC - FB - violet	LC Keying for Fiber box enclosure connector
9917-100910	Keying Enclosure LC - A1 - red	LC Keying for Auxiliary 1 enclosure connector
9917-100911	Keying Enclosure LC - A2 - yellow	LC Keying for Auxiliary 2 enclosure connector
9917-100915	Keying Enclosure LC - D1 - orange	LC Keying for Direct 120/240 enclosure connector
9917-100913	Keying Enclosure LC - blank -black	LC Keying blank for enclosure connector



Installation instructions for the cable and pack polarizers

To add polarizer to cable,
simply slide polarizer over
end of cable until it clips into
position, as shown here.



To add polarizer to spa pack,
simply snap-in polarizer into
corresponding hole, as shown
here



To remove a polarizer from
spa pack, gently use a small
flat-bladed screwdriver to push
side pins inwards, and then
pull out.



General specifications:

Maximum operating temperature: 105°C (221°F)

Watertight rating: IPx5 when correctly mated to corresponding spa pack female connector

Certification information:

North America:



File Number: E305407.

Applicable standards:

- UL498, Standard for Attachment Plugs and Receptacles.
- UL817, Standard for Cord Sets and Power-Supply Cords.
- CSA 22.2 No. 21, Cord Sets and Power-Supply Cords.
- CSA 22.2 No. 42, General Use Receptacles, Attachment Plugs and Similar Wiring Devices.

European:



Test report #3088502-002 from Intertek Testing Services NA, Inc.

Applicable standards:

- EN60799: 1998, Electrical accessories – cord sets and inter-connection cord sets.
- EN60227-1: 1998, PVC insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements.
- EN60884-1: 2002, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements.

Specifications and design are subject to change without prior notice.

9919-100666
Rev. 04/07



J&J ELECTRONICS, INC.
J&J Electronics, Inc.
800.735.4553

Gecko Alliance

450 des Canetons, Quebec City (QC) G2E 5W6 Canada, 1.800.78.GECKO
9225 Stellar Court, Corona, CA 92883 USA, 951.6672000

www.geckoalliance.com

