Swim spa solution™

TechBook

Make your swim spa installation more flexible!

Aeware by gecko®

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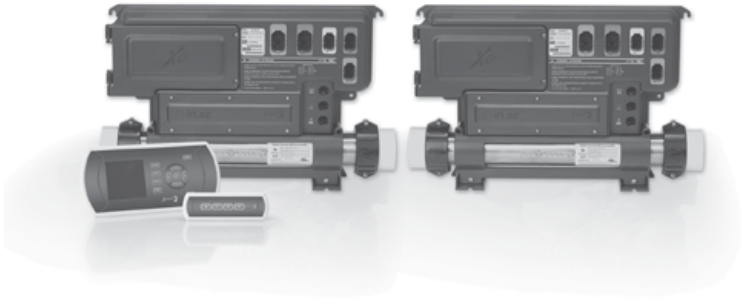
Aeware
by gecko



Swim Spa Solution™

Make your swim spa installation more flexible!

The control solution has been designed to be more flexible and support more outputs. The system includes two in.xe™ packs, one in.k600™ keypad with streamlined interface and an in.k100™ auxiliary keypad. An interface cable (8') is provided with the kit to link the in.xe™ controls together. Information is exchanged between the two in.xe™ controls allowing the flexibility to control a wide range of devices in the swim spa application.

The in.k600™ allows users to control up to 5 different pumps with status indicators on the display. The system also includes a secondary 120V light providing flexibility for lighting your swim spa.

WARNINGS:

Before installing or connecting the unit, please read the following.

* FOR UNITS FOR USE IN OTHER THAN SINGLE-FAMILY DWELLINGS, A CLEARLY LABELED EMERGENCY SWITCH SHALL BE PROVIDED AS PART OF THE INSTALLATION. THE SWITCH SHALL BE READILY ACCESSIBLE TO THE OCCUPANTS AND SHALL BE INSTALLED AT LEAST 5 FEET (1.52 M) AWAY, ADJACENT TO, AND WITHIN SIGHT OF THE UNIT.

* ANY DAMAGED CABLE MUST BE IMMEDIATELY REPLACED.

* TURN POWER OFF BEFORE SERVICING OR MODIFYING ANY CABLE CONNECTIONS IN THIS UNIT.

* TO PREVENT ELECTRIC SHOCK HAZARD AND/OR WATER DAMAGE TO THIS CONTROL, ALL UNUSED RECEPTACLES MUST HAVE A DUMMY PLUG.

* THIS CONTROLLER MUST NOT BE INSTALLED IN PROXIMITY OF HIGHLY FLAMMABLE MATERIALS.

* LOW VOLTAGE OR IMPROPER WIRING MAY CAUSE DAMAGE TO THIS CONTROL SYSTEM. READ AND FOLLOW ALL WIRING INSTRUCTIONS WHEN CONNECTING TO POWER SUPPLY.

* THIS PACK CONTAINS NO SERVICEABLE PARTS. CONTACT AN AUTHORIZED SERVICE CENTER FOR SERVICE.

* ALL CONNECTIONS MUST BE MADE BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ANY STATE, PROVINCE OR LOCAL ELECTRICAL CODE IN EFFECT AT THE TIME OF THE INSTALLATION.

* THIS PRODUCT MUST ALWAYS BE CONNECTED TO A CIRCUIT PROTECTED BY A GROUND FAULT INTERRUPTER.

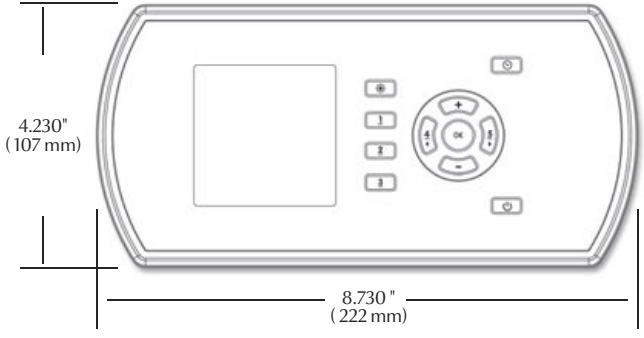
* PROPER WIRING OF THE ELECTRICAL SERVICE BOX, GFCI AND IN.XE™ TERMINAL BLOCK IS ESSENTIAL!

* CHECK YOUR ELECTRICAL CODE FOR LOCAL REGULATIONS. ONLY COPPER WIRE SHOULD BE USED, NEVER ALUMINUM.

DISPOSAL OF THE PRODUCT

THE APPLIANCE (OR THE PRODUCT) MUST BE DISPOSED OF SEPARATELY IN ACCORDANCE WITH THE LOCAL WASTE DISPOSAL LEGISLATION IN FORCE.

in.k600™ dimensions:

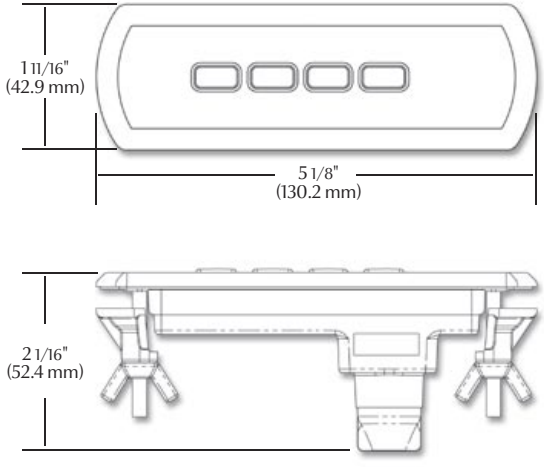


General specifications:

Environmentals:	
Storage temperature:	85°C (185°F) to -30°C (-22°F)
Operating temperature:	65°C (149°F) to -20°C (-4°F)
Humidity:	up to 95% condensing
Mechanical Specs:	
Weight:	0.4763 Kg (1.05 lbs)
Dimensions (W x H x D):	Front panel
	8.726" x 4.227" x 0.200"
Standards:	IP ratings IPX6

Specifications and design are subject to change without notice.

in.k100™ Dimensions:

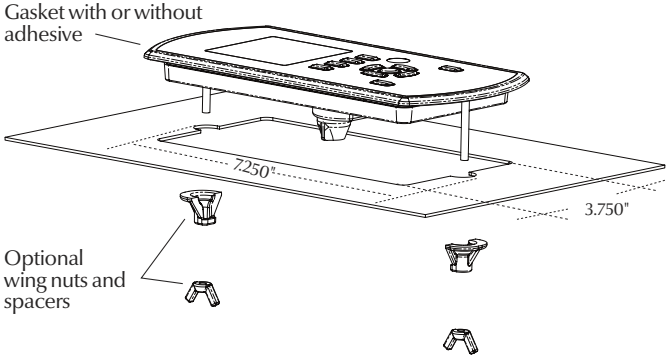


General specifications:

Environmentals:	
Storage temperature:	70˚C (158˚F) to –30˚C (-22˚F)
Operating temperature:	60˚C (140˚F) to –20˚C (-4˚F)
Humidity:	100% condensing
Mechanical Specs:	
Weight:	0.41 kg (0.9 lbs)
Dimensions (W x H x D):	Front Panel:
	130.2 mm x 42.9 mm x 52.4 mm
	(5 1/8" x 1 11/16" x 2 11/16") Soft gasket
Standards:	UV resistance (ASMT D4329)
	UL, CSA, TUV and CE

Specifications and design are subject to change without notice.

Installation in.k600™

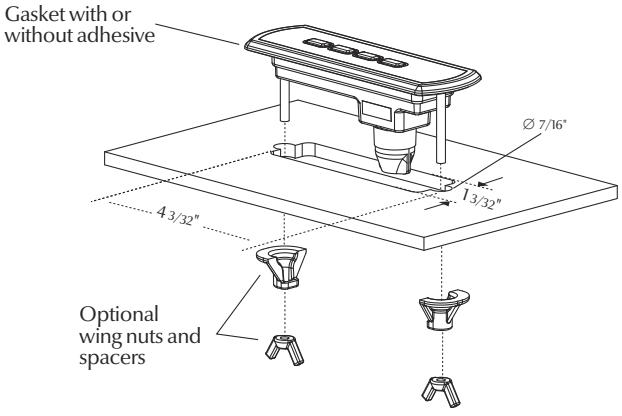


To install the in.k600™ low profile, determine the mounting location and cut out a rectangular shape opening of 7.250" by 3.750" (see illustration).

Clean the installation surface and peel the adhesive gasket from the back of the keypad.

Insert keypad and align it correctly, then ensure it's properly glued by gently pressing evenly on the entire surface.

Installation in.k100™

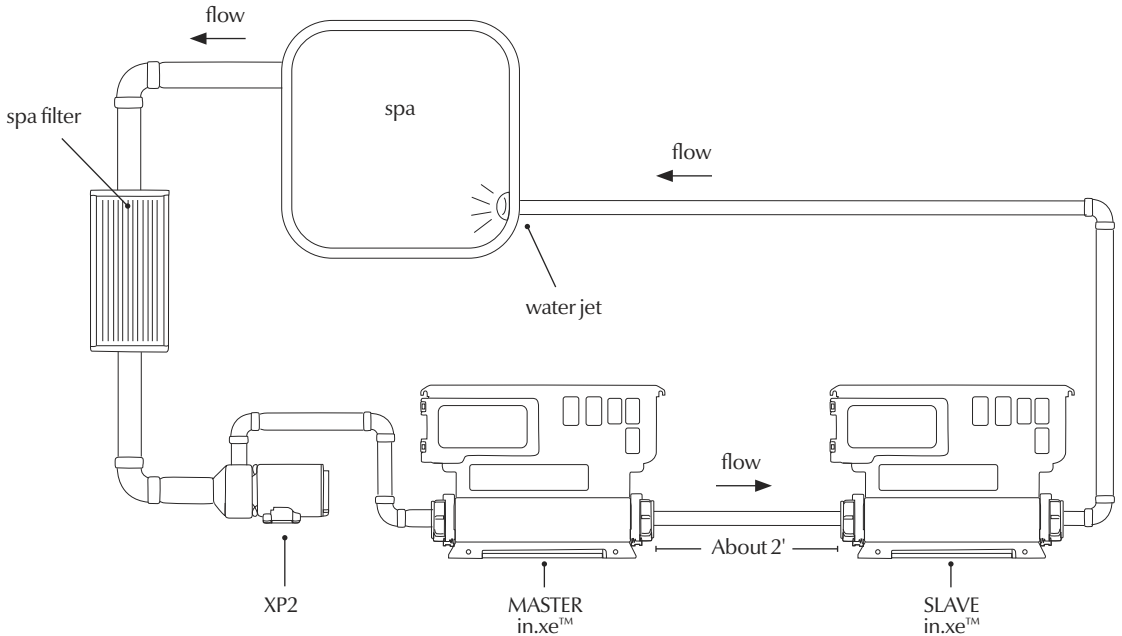


To install the in.k100™, determine the mounting location and cut out a rectangular shape opening of 4 3/32" by 1 3/32" (see illustration).

Clean the installation surface and peel the adhesive gasket from the back of the keypad.

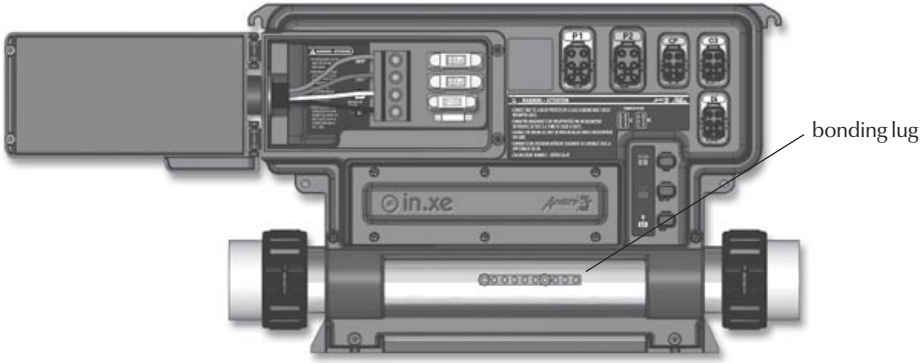
Insert keypad and align it correctly, then ensure it's properly glued by gently pressing evenly on the entire surface.

Swim spa installation scheme



* Requirers a minimum of 18 GPM

North American model in.xe™



To install the wiring for the in.xe™ spa control, you'll need a Phillips screwdriver and a flat screwdriver.

Loosen the 2 screws of the Spa Pack door and open it.

Remove 5 1/2" of cable insulation. Strip away 1" of each wire insulation.

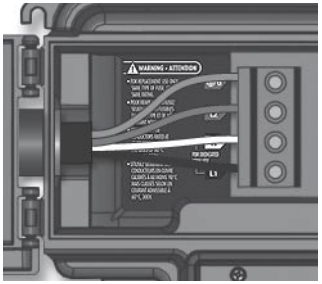
Pull the cable through the cut-out of the box and secure it with a strain relief (1" NPT strain relief; hole diameter: 1.335").

Make sure that only the uncut sheathing is clamped at this opening.

Push the color-coded wires into the terminals as indicated on the sticker and use the flat screwdriver to tighten the screws on the terminals.

After making sure wire connections are secure, push them back into the box and close the door. Tighten the 2 screws of the Spa Pack door.

Connect the bonding conductor to the bonding lug on the front of the in.xe™ Spa Pack (a grounded electrode conductor shall be used to connect the equipment grounding conductors).

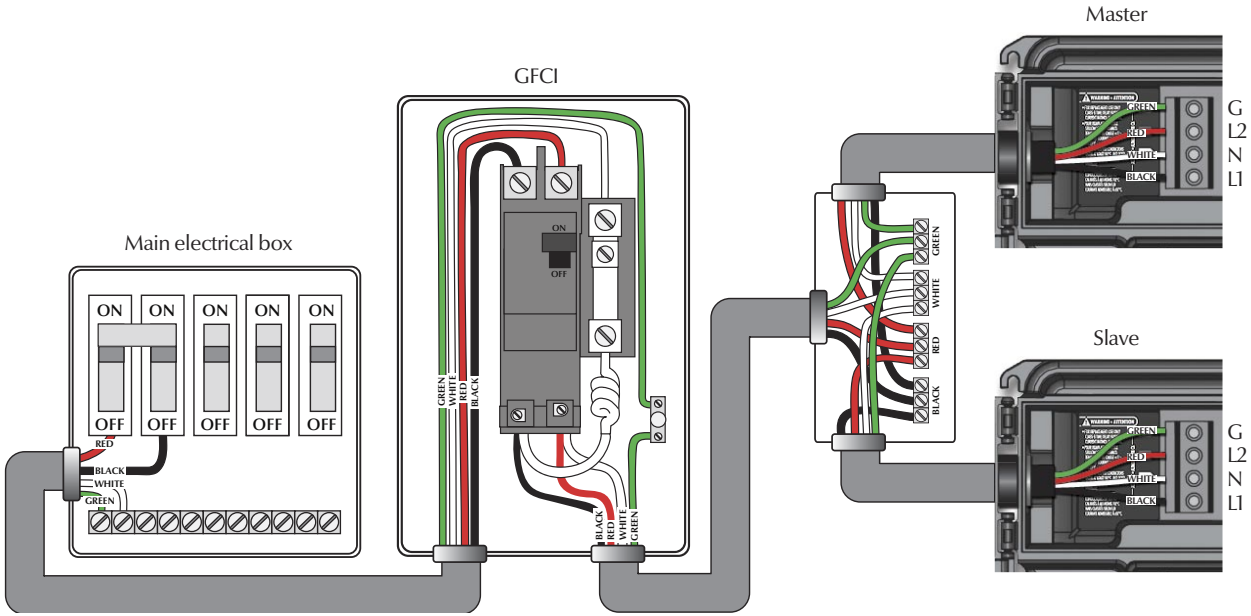


For 240 VAC (4 wires)

Correct wiring of the electrical service box, GFCI, and pack terminal block is essential.

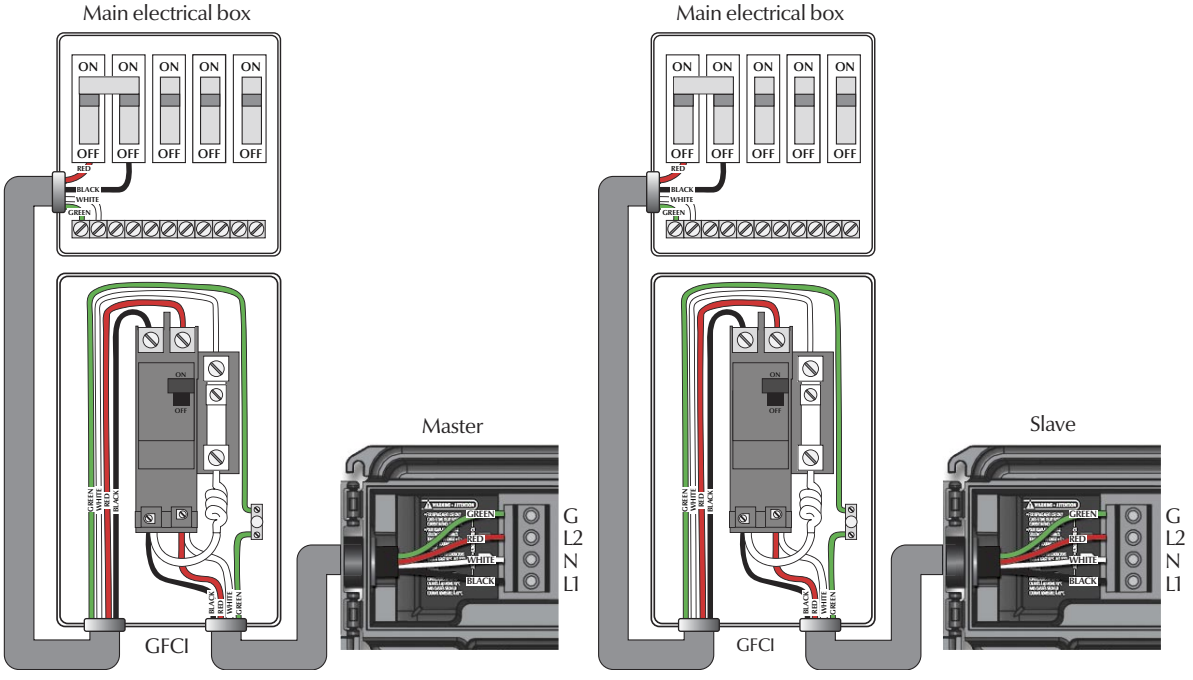
Call an electrician if necessary.

Electrical wiring North American model in.xe™ - 1 breaker



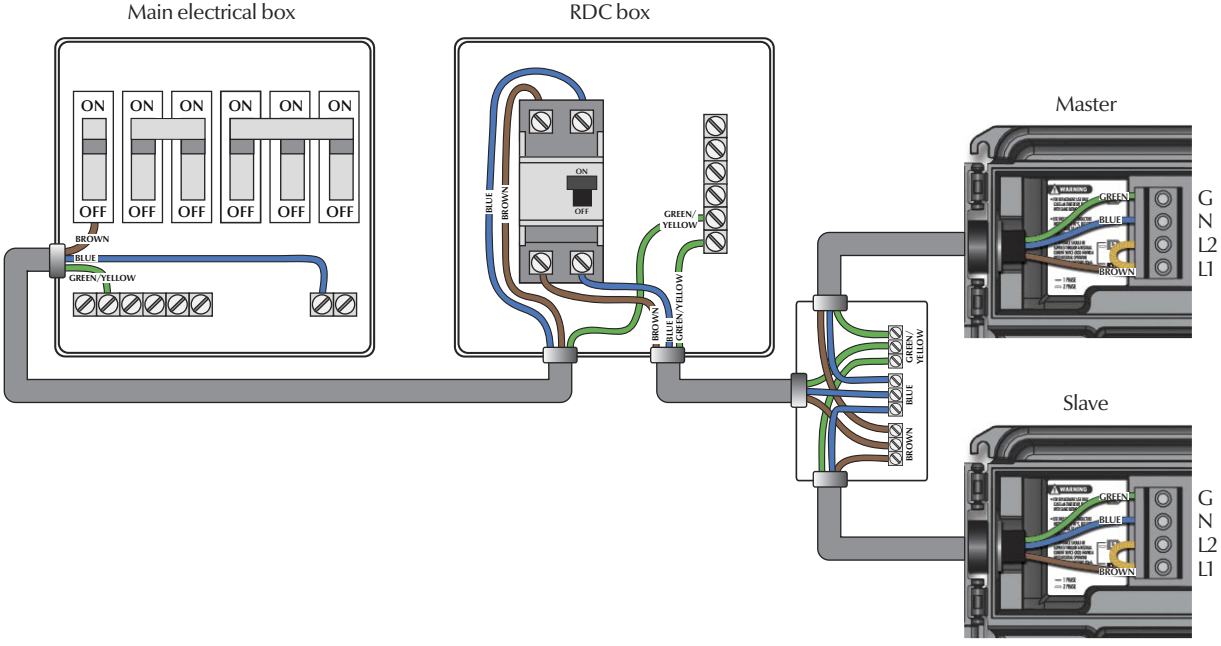
WARNING: This wiring diagram is for reference use only. In the event of discrepancies between this wiring diagram and any federal, state or local Electrical Codes and Regulations in effect at the time of installation, the Electrical Codes and Regulations in effect at the time of installation prevails.

Electrical wiring North American model in.xe™ - 2 breakers



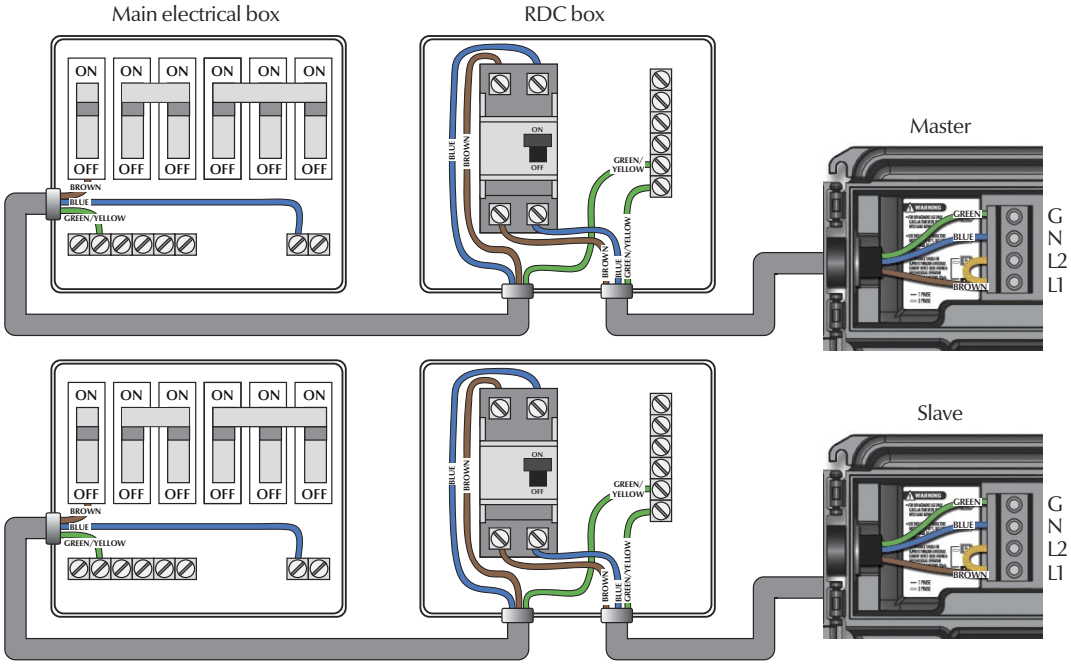
WARNING: This wiring diagram is for reference use only. In the event of discrepancies between this wiring diagram and any federal, state or local Electrical Codes and Regulations in effect at the time of installation, the Electrical Codes and Regulations in effect at the time of installation prevails.

Electrical wiring European model in.xe.ce™ - single phase



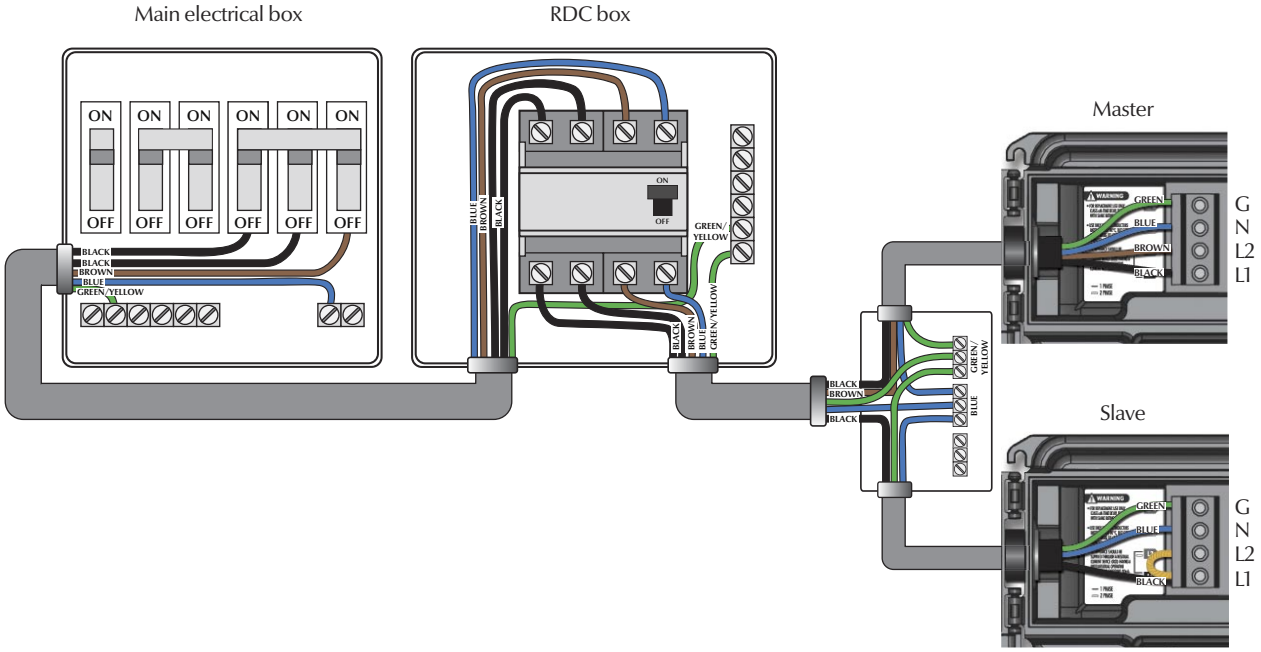
WARNING: This wiring diagram is for reference use only. In the event of discrepancies between this wiring diagram and any federal, state or local Electrical Codes and Regulations in effect at the time of installation, the Electrical Codes and Regulations in effect at the time of installation prevails.

Electrical wiring European model in.xe.ce™ - dual phases

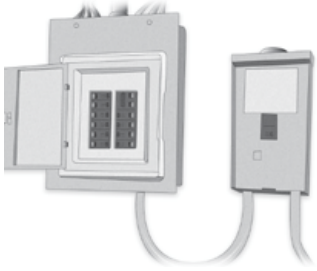


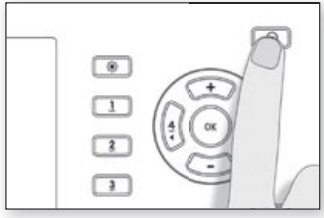
WARNING: This wiring diagram is for reference use only. In the event of discrepancies between this wiring diagram and any federal, state or local Electrical Codes and Regulations in effect at the time of installation, the Electrical Codes and Regulations in effect at the time of installation prevails.

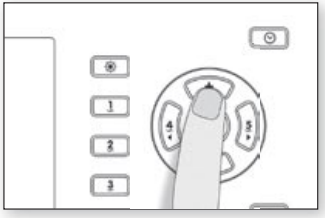
Electrical wiring European model in.xe.ce™ - three phases



WARNING: This wiring diagram is for reference use only. In the event of discrepancies between this wiring diagram and any federal, state or local Electrical Codes and Regulations in effect at the time of installation, the Electrical Codes and Regulations in effect at the time of installation prevails.







Make sure all accessories are linked to the bonding connector and connected to pack.

Turn on the breaker.

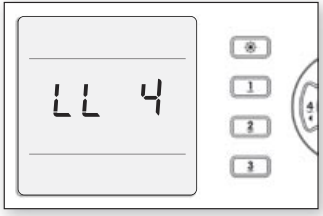
It's important to specify the current rating of the GFCI used to insure safe and efficient current management (and no GFCI trippings).

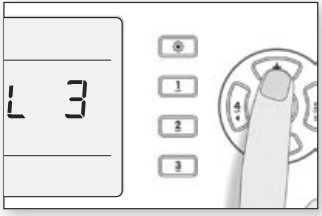
Press and hold **Prog.** button until you access the breaker setting menu.

The values displayed by the system correspond to 0.8 of the maximum amperage capacity of the GFCI.

GFCI	Br
60 Amp	48 Amp
50 Amp	40 Amp
40 Amp	32 Amp
30 Amp	24 Amp
20 Amp	16 Amp

Use **Up or Down** button to select the desired value.
Then press **Prog.** button to set breaker rating.





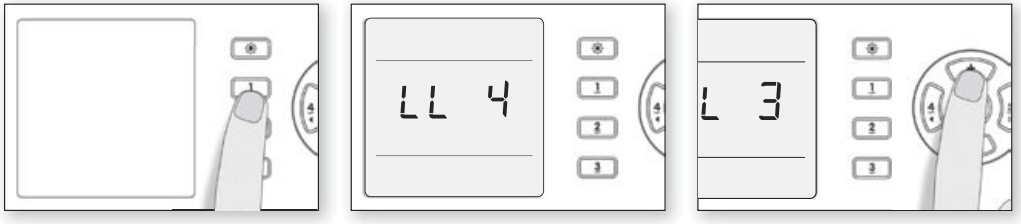
Programming the in.xe™ using the in.stik™

This feature is very useful on production lines to configure packs and in the field for service purposes like software updates.

Follow these simple steps to upload new pre-determined low level program configurations into the spa pack.

1. Shut electrical power off.
2. Insert the in.stik™ into the communication connector of the MASTER pack (see fig. above).
3. Turn power on. The in.xe™ system will upload all the different configurations set into the in.stik™ memory.
4. The in.xe™ will then enter the low-level configuration menu. The keypad display will show LL xx where "xx" represents the configuration number registered in the system.
5. Repeat steps 1 to 4 but this time on the SLAVE pack.
6. Connect the communication cable between the MASTER and SLAVE packs (use the cable in.tr LV-LV-8-KCO 9920-401316).
7. Use the **Up/Down** key to choose the new desired low level configuration number.
8. Press the **Prog.** key to confirm the selected configuration (consult the low level configuration selection chart section of this manual).

See low level configuration chart page 18.



Programming the in.xe™ using the keypad

Although every in.xe™ spa is factory set, in certain cases when servicing or replacing a unit in the field, it may be necessary to set a new pre determined low level program configuration into the spa pack.

Follow these simple steps to re-enter the low level programming menu using the keypad:

1. Press and hold the **Pump 1** key for 30 seconds.
2. Use the **Up/Down** key to choose the new desired low level configuration number.
3. Press the **Prog.** key to confirm the selected configuration (consult the low level configuration selection chart section of this manual).

NOTE: If the **Prog.** key is not pressed within 25 seconds, the unit will exit this menu without changing any settings

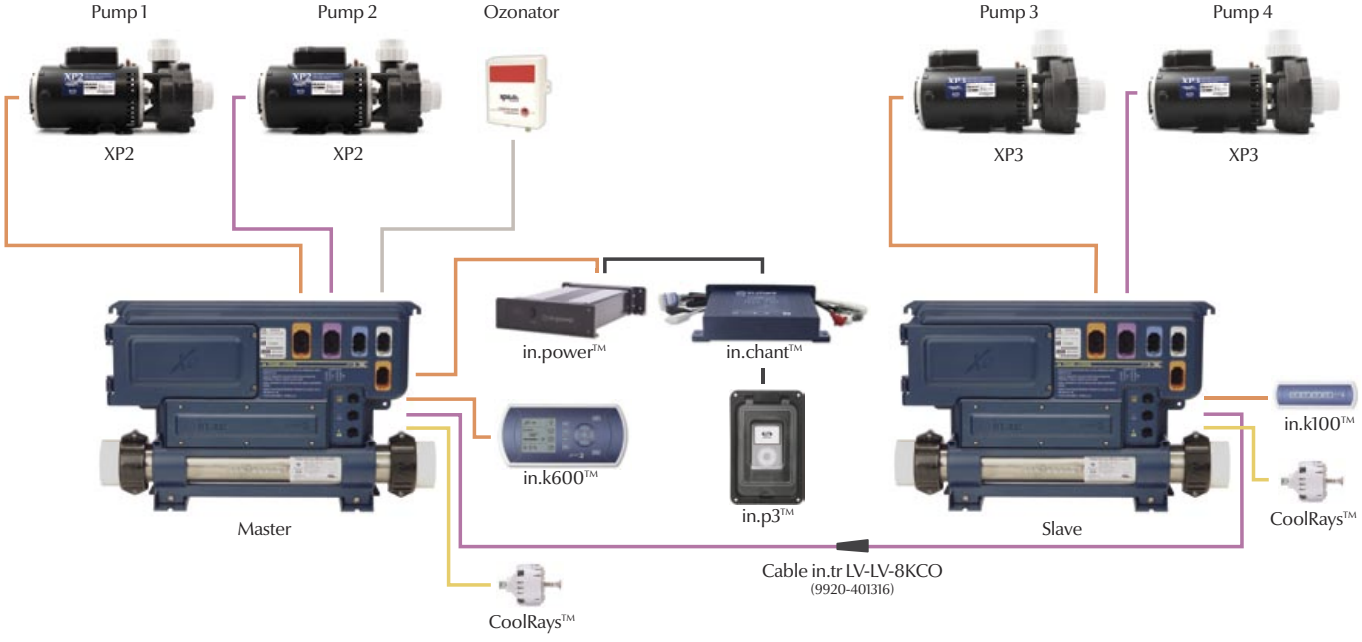
See low level configuration chart page 18.

Low Level Configuration Selection Chart

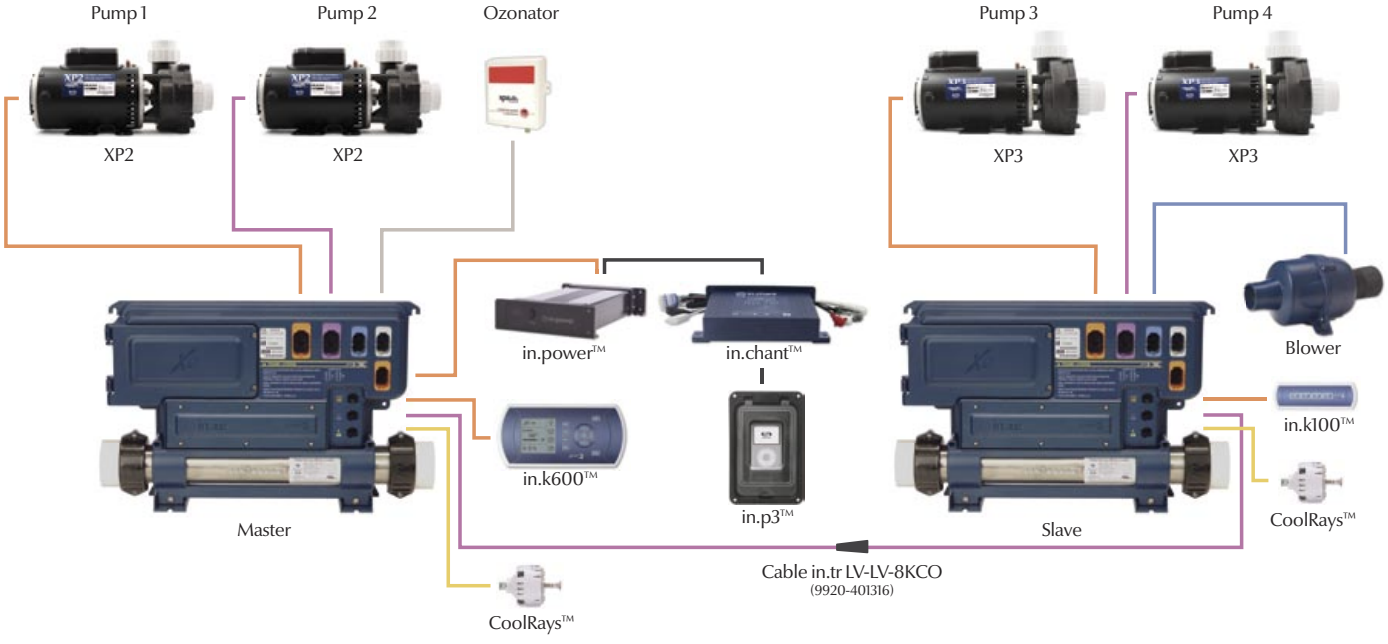
Config. #	P1	P2	P3	P4	P5	BL	CP configuration	Ozone configuration	Filter Type	Heater Pump	Connection Diagram
1	2sp	1sp	1sp	1sp	--	--	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 19
2	2sp	1sp	1sp	1sp	--	X	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 20
3	2sp	2sp	1sp	1sp	--	--	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 19
4	2sp	2sp	1sp	1sp	--	X	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 20
5	2sp	1sp	1sp	1sp	X	--	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 21
6	2sp	1sp	1sp	1sp	X	X	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 22
7	2sp	1sp	1sp	--	--	--	---	On during Filter cycle, with P1	Clean, P1L	P1	Page: 23

Note: Every OEM has its own preset configurations.
The Low level configuration may differ depending on the manufacturer.

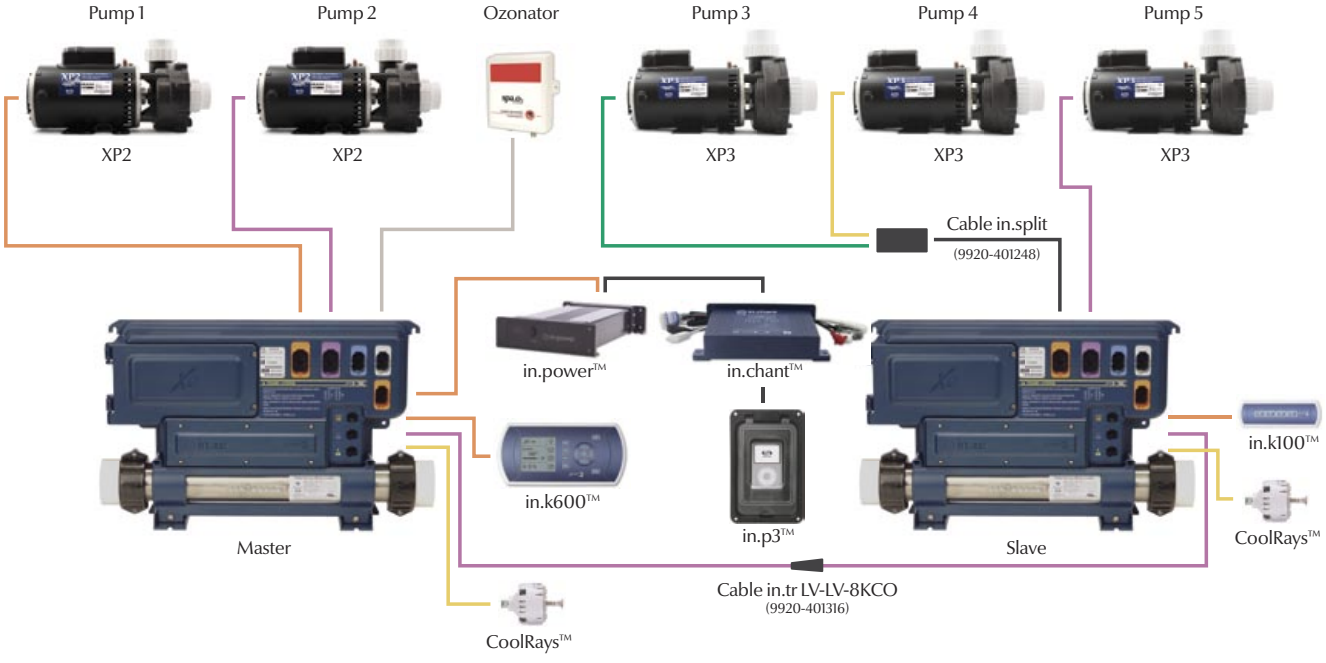
Configuration 1 & 3 / 4 Pump System



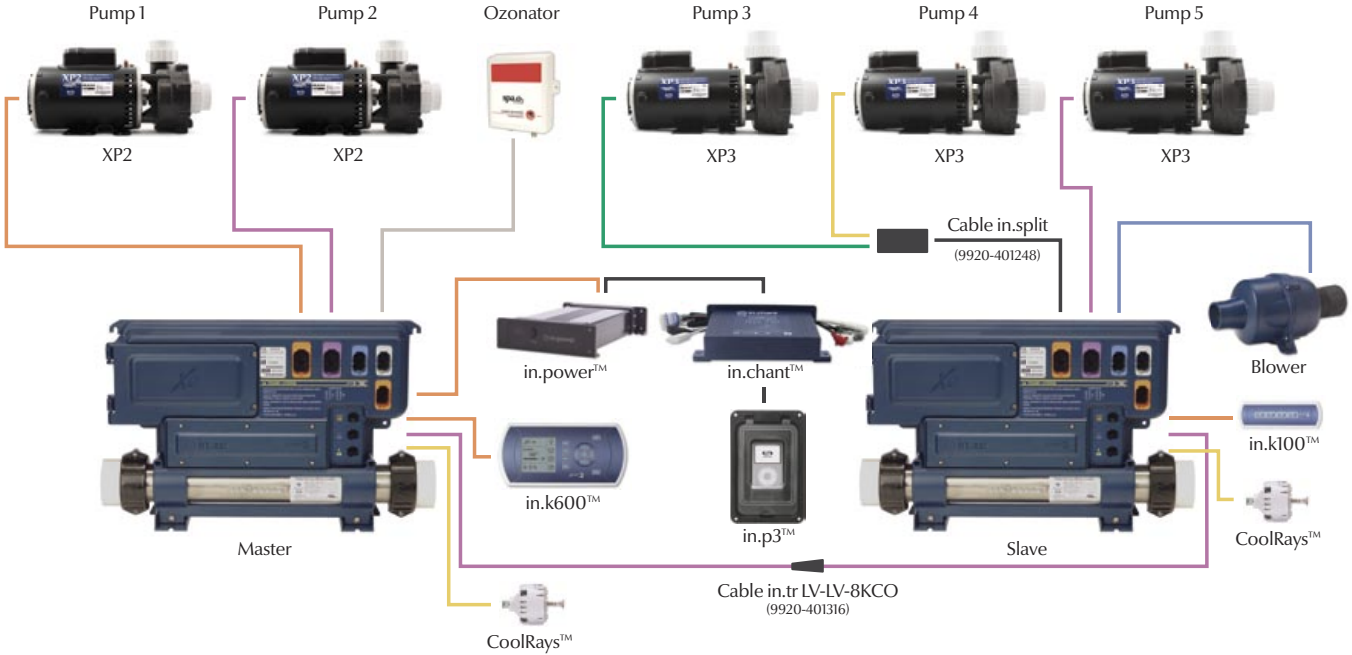
Configuration 2 & 4 / 4 Pump and Blower System



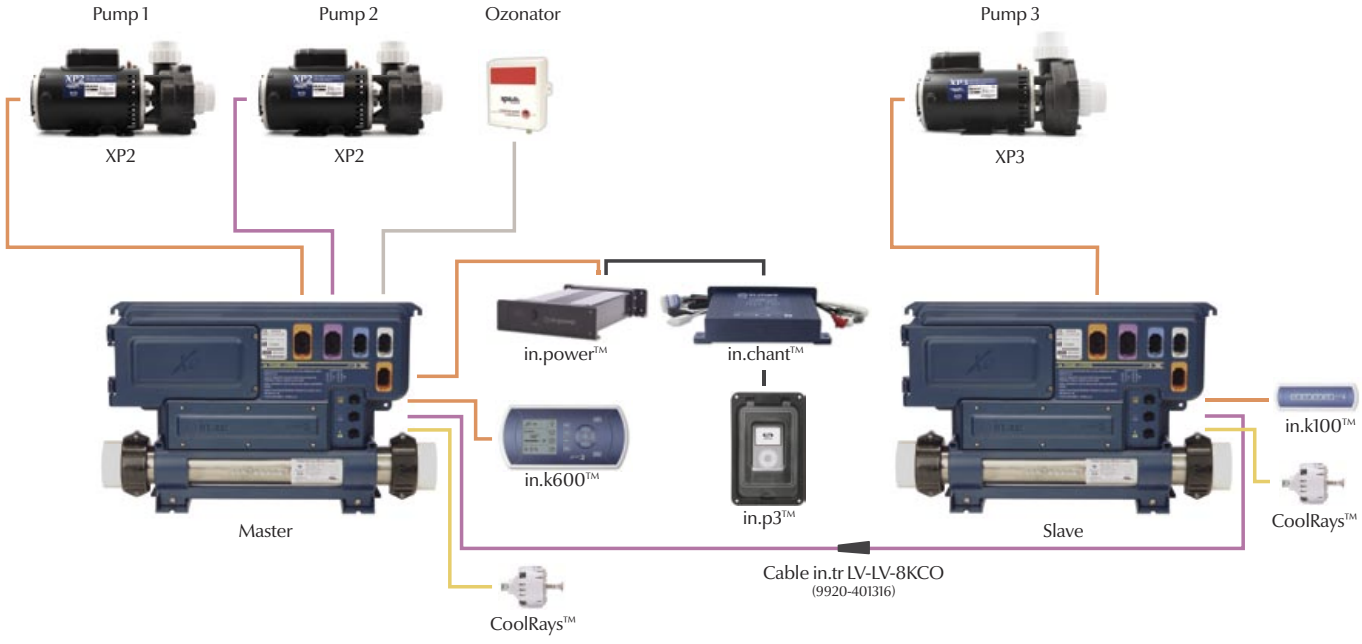
Configuration 5 / 5 Pump System



Configuration 6 / 5 Pump and Blower system



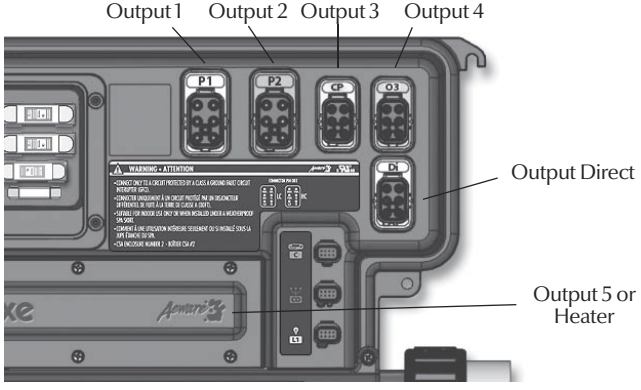
Configuration 7 / 3 Pump System



in.xe™ programming field options

In the event where none of the pre-determined low level program configurations built into the in.xe™ system suits your spa equipment assembly, it's possible to customize the in.xe™ system by manually entering key parameter settings.

To access this menu, press and hold **Prog**. for 30 seconds. Use **Up** or **Down** key to choose setting. Press **Prog**. key to advance to the next parameter.



Parameter	Display	Options	Description
Output 1A	1.__	--,1H,1L,2H,2L,3H,3L,4H, 4L,P5,BL,CP,O3,L2,H	Accessory connected to the relay of Output 1A
Output 1B	2.__	--,1H,1L,2H,2L,3H,3L,4H, 4L,P5,BL,CP,O3,L2,H	Accessory connected to the relay of Output 1B
Output 2	3.__	--,1H,1L,2H,2L,3H,3L,4H, 4L,P5,BL,CP,O3,L2,H	Accessory connected to the relay of Output 2A
Output 3	4.__	--,1H,1L,2H,2L,3H,3L,4H, 4L,P5,BL,CP,O3,L2,H	Accessory connected to the relay of Output 3A
Output 4	5.__	--,1H,1L,2H,2L,3H,3L,4H, 4L,P5,BL,CP,O3,L2,H	Accessory connected to the relay of Output 4A
Output 5	6.__	--, H	Accessory connected to the relay of Output 5A

Parameter	Display	Options	Description
CP usage	CU._	CP Standard = 0 CP Always On = 1	Usage of the circulation pump
Ozone usage	OU._	Ozone with filtration = 0 Ozone Always On = 1	Usage of the ozone generator
Ozone Pump	oP._	Circulation pump = 0 Pump #1 = 1	Pump associated with the ozone generator
Ozone Type	O._	Standard (UV) = 0 Timed (Corona) = 1	Type of Ozone generator
Heater Pump	HP._	Circulation pump = 0 Pump #1 = 1	Pump associated with the Heater
Filter Config	FL._	Purge only = 0 With Circ. Pump = 1 With Pump 1, Low speed = 2	Filter cycle configuration
Temp. Units	Un._	°F = 0 °C = 1	Temperature units used on display
Clock Format	CL._	No time display = 0 AM/PM format = 1 24H format = 2	Clock display format
Cool down	C.__	30 to 240 seconds	Cool down of the heating element in seconds
Output 1A current	1.__	1 to 20 amperes	Current draw of the accessory connected to the relay of Output 1A
Output 1B current	2.__	1 to 15 amperes	Current draw of the accessory connected to the relay of Output 1B

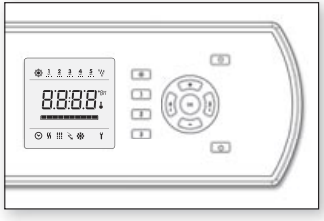
Parameter	Display	Options	Description
Output 2 current	3.__	1 to 15 amperes	Current draw of the accessory connected to the relay of Output 2A
Output 3 current	4.__	1 to 15 amperes	Current draw of the accessory connected to the relay of Output 3A
Output 4 current	5.__	1 to 15 amperes	Current draw of the accessory connected to the relay of Output 4A
Output 5 current	6.__	1 to 17 amperes	Current draw of the accessory connected to the relay of Output 5A
Direct current	7.__	0 to 5 amperes	Current draw of the Direct output
Minimum input current	8.__	10 to 20	Minimum input current (breaker size)
Number of phases	P.__	1 or 2 (UL) 1, 2 or 3 (CE)	Number of Phase / Breaker
Input current	b.__	10 to 60A Single Phase (UL and CE) 10 to 48A Dual Phase (UL) 10 to 40A Dual Phase (CE) 10 to 20A Triple Phase (CE)	Available household current

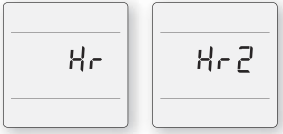
in.xe™ error codes

Error codes indicate a failure condition or a problem which needs to be corrected to ensure proper functioning of the system. The error code and the water temperature are alternately displayed.

If there is more than one active error, the one with highest priority is displayed.

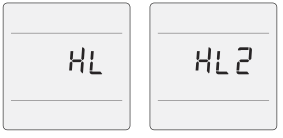
All error codes will be displayed on the keypad display.





Hr: means the error comes from the MASTER pack.
Hr2: means the error comes from the SLAVE pack.

An internal hardware error has been detected in in.xe™.



HL: means the error comes from the MASTER pack.
HL2: means the error comes from the SLAVE pack.

Water temperature at the heater has reached 119°F.
Do not enter spa water!

FLO: means the error comes from the MASTER pack.
FL2: means the error comes from the SLAVE pack.

The system did not detect any water flow while the main pump was running.

OH: means the error comes from the MASTER pack.
OH2: means the error comes from the SLAVE pack.

Water temperature in the spa has reached 108°F.
Do not enter spa water!

in.xe™ error codes

Prr: means the error comes from the MASTER pack.
Pr2: means the error comes from the SLAVE pack.

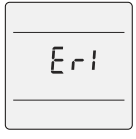
The Prr error message indicates a problem with regulation probe. The system is constantly verifying if temperature probe reading is within normal limits.

AOH: means the error comes from the MASTER pack.
AO2: means the error comes from the SLAVE pack.

Temperature inside the spa skirt is too high, causing the internal temperature in the in.xe™ to exceed normal limits.

UPL

No low level configuration software has been downloaded into the system.



Er1

The communication between the Master and the SLAVE pack doesn't work.

in.xe™ error codes

SLA

The pack on which the main keypad is connected is a SLAVE.

LLXX

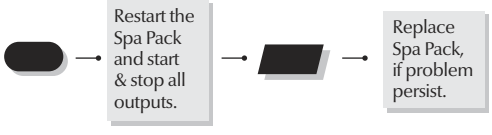
Unable to select the desired low level (when you confirm it goes back into the low level menu).

LLEr

The selected configuration is not a swim spa configuration and a SLAVE pack has been detected.

Hr	An internal hardware error has been detected (MASTER pack).
or	
Hr2	An internal hardware error has been detected (SLAVE pack).

Flow chart



HL

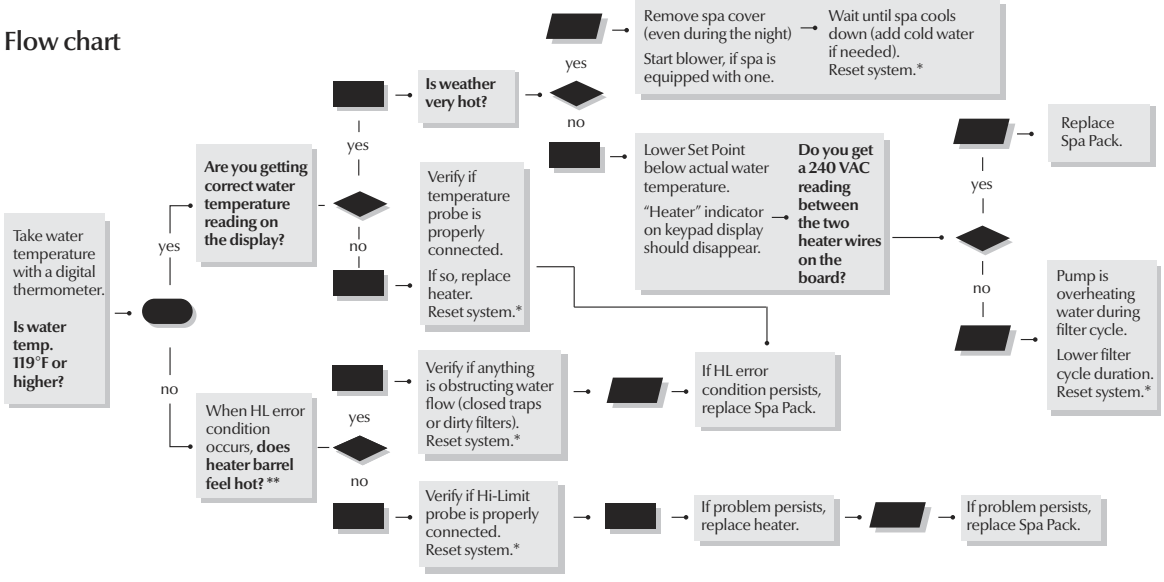
The system has shut down because the temperature at the heater has reached 119°F (48°C) (MASTER pack).

or

HL2

The system has shut down because the temperature at the heater has reached 119°F (48°C) (SLAVE pack).

Flow chart



* To Reset System: Turn power Off and On again at the main breaker.

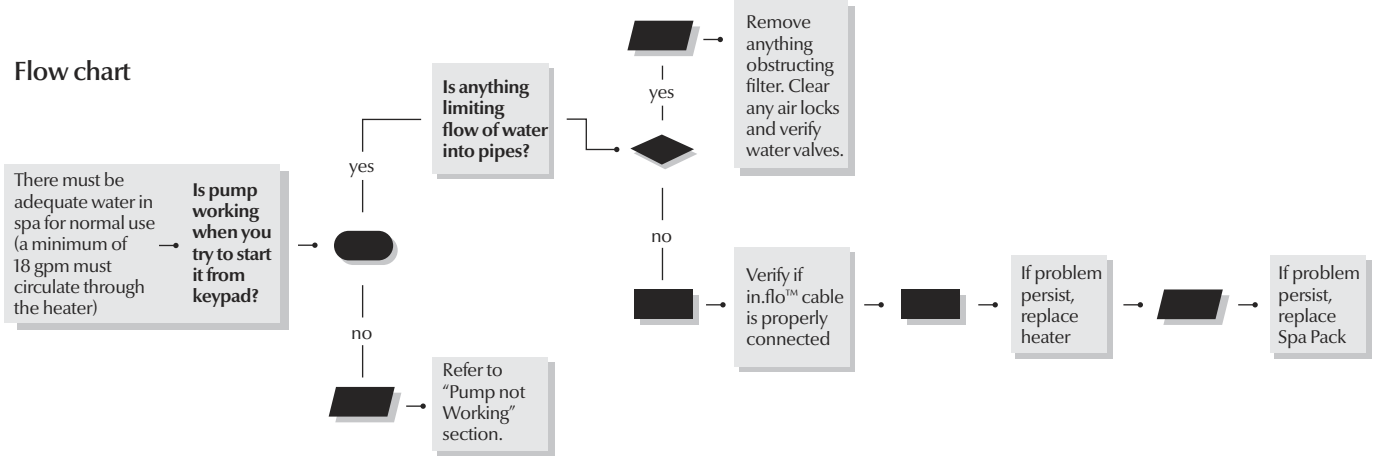
** Warning! handle with care as heater may be really hot!

FLO	The system did not detect any water flow while the primary pump was running (MASTER pack).
or	
FL2	The system did not detect any water flow while the primary pump was running (SLAVE pack).

Follow Troubleshooting Flow Chart below to identify the problem:

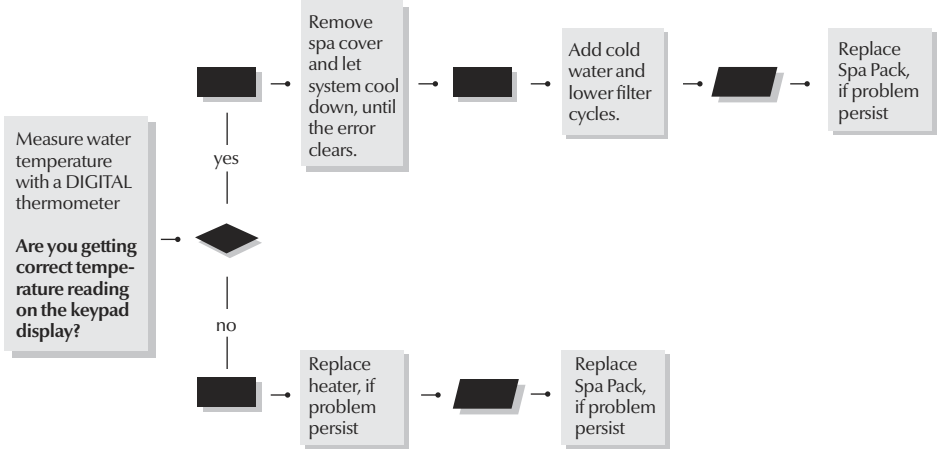
Make sure that the low-level programming has been properly set, with or without circulation pump (depending on your system configuration).

Flow chart



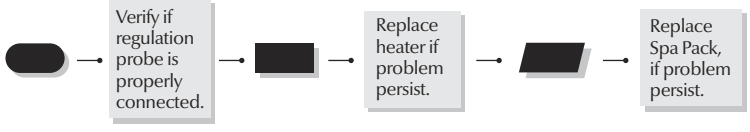
OH	**Water temp. in the spa has reached 108°F (MASTER pack).**
or	
OH2	**Water temp. in the spa has reached 108°F** (SLAVE pack).

Flow chart



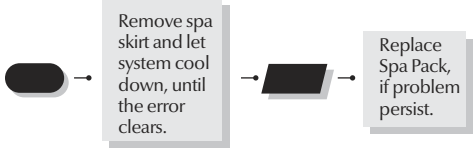
Prr	Regulation probe issue (MASTER pack).	or	Pr2	Regulation probe issue (SLAVE pack).

Flow chart



AOH	**Temperature inside the spa equipment compartment is too high (MASTER pack).**
or	
AO2	**Temperature inside the spa equipment compartment is too high (SLAVE pack).**

Flow chart



UPL

No low level configuration software in system!

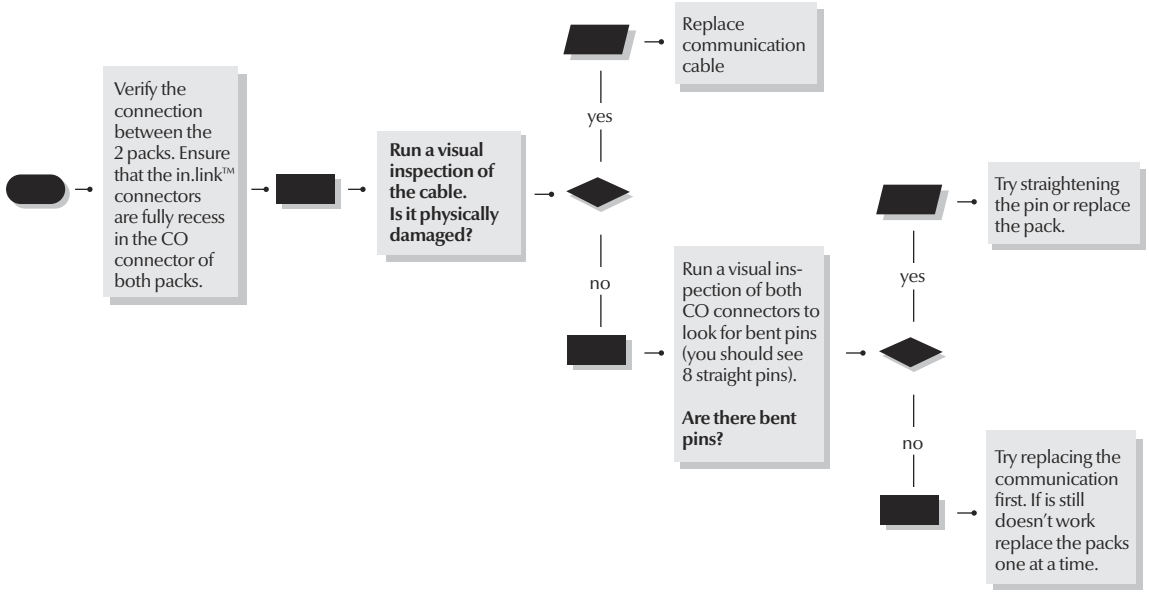
- New low level configuration software needs to be downloaded into the in.xe™ spa system, without it the system will not be operable.
- Contact our toll free line for technical support (**1-800-784-3256**).

Note: this line is dedicated to assist authorized service technicians and dealers only.

Er1

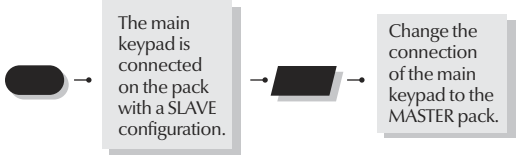
The communication between the MASTER and the SLAVE pack doesn't work.

Flow chart



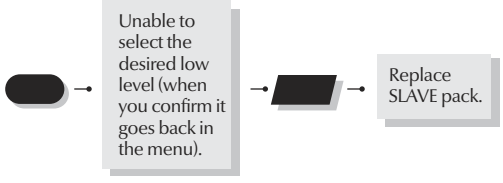
SLA	The main keypad is connected on the pack with a SLAVE configuration.

Flow chart



LL__	Unable to select the desired low level (when you confirm it goes back into the low level menu).

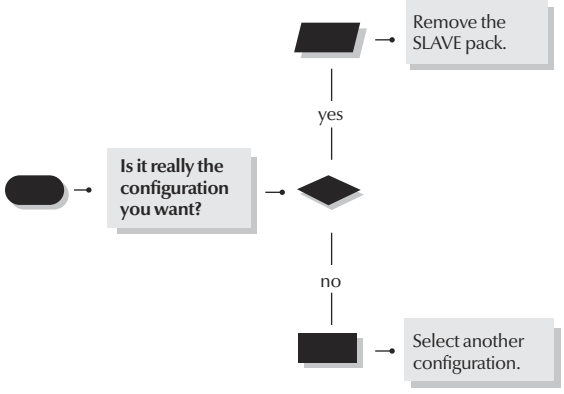
Flow chart



LLEr

The selected configuration is not a swim spa configuration and a SLAVE pack has been detected.

Flow chart



Electrical specifications UL CSA:

Voltage Input:	120/240 VAC
Current Input:	2 x 48 A or 1 x 60 A

Master in.xe™

Output		Voltage	Current
Output 1A	Pump 1 (2 speed) High	120/240V	20 FLA/70 LRA
Output 1B	Pump 1 (2 speed) Low	120/240V	15 FLA/60 LRA
Output 2	Pump2 (1 speed)	240V	15 FLA/60 LRA
Output 3	Blower	120/240V	6 FLA/10 A
Output 4	Circ Pump	120/240V	6 FLA/10 A
Direct	Direct (audio)	120/240V	10 A
L1	Light	12V	1 A
Output 5	Heater	240V	4.0 kW

** The total maximum amperage for blower, circ pump and Direct cannot exceed 12 Amps

heat.wav ratings

Voltage:	240 VAC, 60 Hz
Current:	17 A resistive (4 kW at 240V)
Flow rate:	Minimum of 18 GPM is required

Applicable Standard

Ul 1563 Fifth ed.

CSA No. 22.2 - 218.1-M89

Slave in.xe™

Output		Voltage	Current
Output 1A	Pump3 (1 speed)	120/240V	10 FLA/60 LRA*
Output 1 B	Pump4 (1 speed)	240V	15 FLA/60 LRA
Output 2	Pump5 (1 speed)	120/240V	10 FLA/60 LRA
Output 3	Light 3	120/240V	6 FLA/10 A
Output 4	Ozone	120/240V	6 FLA/10 A
Direct	Direct (other)	120/240V	6 FLA/10 A
L1	Light 2	12V	1 A
Output 5	Heater	240V	4.0 kW

* To install pump 5, an in.split™ cable is required. If the pump 5 is not installed, the pump 3 can be 20 FLA and a two speed pump.

  If both pump 3 & pump 5 are installed, then each individual pump cannot exceed 10 FLA (max total combined of 20 FLA).

** The total maximum amperage for light 3, Ozone and Direct cannot exceed 12 Amps

Electrical specifications TUV:

Voltage Input:	230/400 VAC 3 phase or single
Current Input:	3 x 20 A max or 1 x 60 A

Master in.xe™

Output		Voltage	Current
Output 1A	Pump 1 (2 speed)	230V	15 FLA/60 LRA
Output 1B	Pump 1 (2 speed)	230V	15 FLA/60 LRA
Output 2A	Pump 2 (1 speed)	230V	15 FLA/60 LRA
Output 3	Blower	230V	6 FLA/10 A
Output 4	Circ Pump	230V	6 FLA/10 A
Direct	Direct (audio)	230V	10 A
L1	Light	12V	1 A
Output 5	Heater	230V	3.8 kW

** The total maximum amperage for blower, circ pump and Direct cannot exceed 12 Amps

Applicable Standard

European:

EN/IEC 60335-1: 2002/2001

EN/IEC 60335-2-60: 2003/2002 (incl. Corr. & Am up to 2004)

EN55014-1, EN55014-2

EN61000-3-2, EN61000-3-3

Australia:

AS/NZS 3136:2001 +A1 +A2

AS/NZS 3100:2002 + A1+A2+A3

Slave in.xe™

Output	Voltage	Current	
Output 1A	Pump 3 (1 speed)	230V	7.5 FLA/60 LRA*
Output 1B	Pump 4 (1 speed)	230V	15 FLA/60 LRA
Output 2	Pump 5 (1 speed)	230V	7.5 FLA/60 LRA
Output 3	Light 3	230V	6 FLA/10 A
Output 4	Ozone	230V	6 FLA/10 A
Direct	Direct (other)	230V	6 FLA/10 A
L1	Light 2	12V	1 A
Output 5	Heater	230V	3.8 kW

* To install pump 5, an in.split™ cable is required. If the pump 5 is not installed, the pump 3 can be 15 FLA and a two speed pump. If both pump 3 & pump 5 are installed, each individual pump cannot exceed 7.5 FLA (max total combined of 15 FLA).

** The total maximum amperage for light 3, Ozone and Direct cannot exceed 12 Amps

heat.wav ratings

Voltage:	230 VAC, 50 Hz
Current:	8.7 A resistive (2 kW at 230V)
	5.7 A resistive (1.3 kW at 230V)
	16 A resistive (3.8 kW at 230V)
Flow rate:	Minimum of 18 GPM is required

Environmental:

- Operating temperature: 0 °C (32 °F) to 50 °C (122 °F)
- Storage temperature: -20°C (-4°F) to 85°C (185°F)
- Humidity: up to 85% RH, non condensing
- Water ingress protection: IPx5

Mechanical:

Weight:	4.76 kg (10.5 lbs)
Dimensions (W x H x D):	
Chassis:	441.5 x 298.5 x 129 mm (17.38" x 11.75" x 5.1")

IPx5 level of waterproofing is conditional on 3 items:

- Both front covers (heater and input wiring) are closed and screwed shut.
- A suitable waterproof strain-relief/bushing is used for the cable entry into the pack.
- Any unused in.link™ connection (HC, LC, or low voltage) is plugged with the appropriate blank plug.

The in.xe.ce™ is lab tested to IPx5 enclosure protection levels.

Advanced electronics! Water resistance!

GECKO®

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