



in.xe

Entry-level spa pack platform



Techbook

Featuring in.k200 keypad



So advanced!
It's like walking on water!

Aenware **3**
by gecko

Preliminary
version



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in.xe error codes

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Aeware:3
by gecko



in.xe

Entry-level spa system platform.

in.xe is an entry level spa system with Aeware signature design and breakthrough features.

Part of the in.pac series of spa packs, heaters and accessories, in.xe is designed for typical entry level spa configurations:

- Dual Pump System
- Pump & Blower System
- 2 accessories (120/240Vac)
- Direct Entry Accessory

in.xe can be wall-mounted or installed on its mounting base and it comes with an integrated 4 kw water heater.

**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.



In.xe boast a long list of technical features. Each of them stands on its own merits and contributes to bring to spa and hot tub manufacturers the most advanced solutions available to them:



In.put: new input terminal bloc



In.flo: dry-fire protect



In.seal: watertight protection



In.kin: kinetic heat monitoring



In.alex: board access prevention



In.t.cip: water temp. algorithm



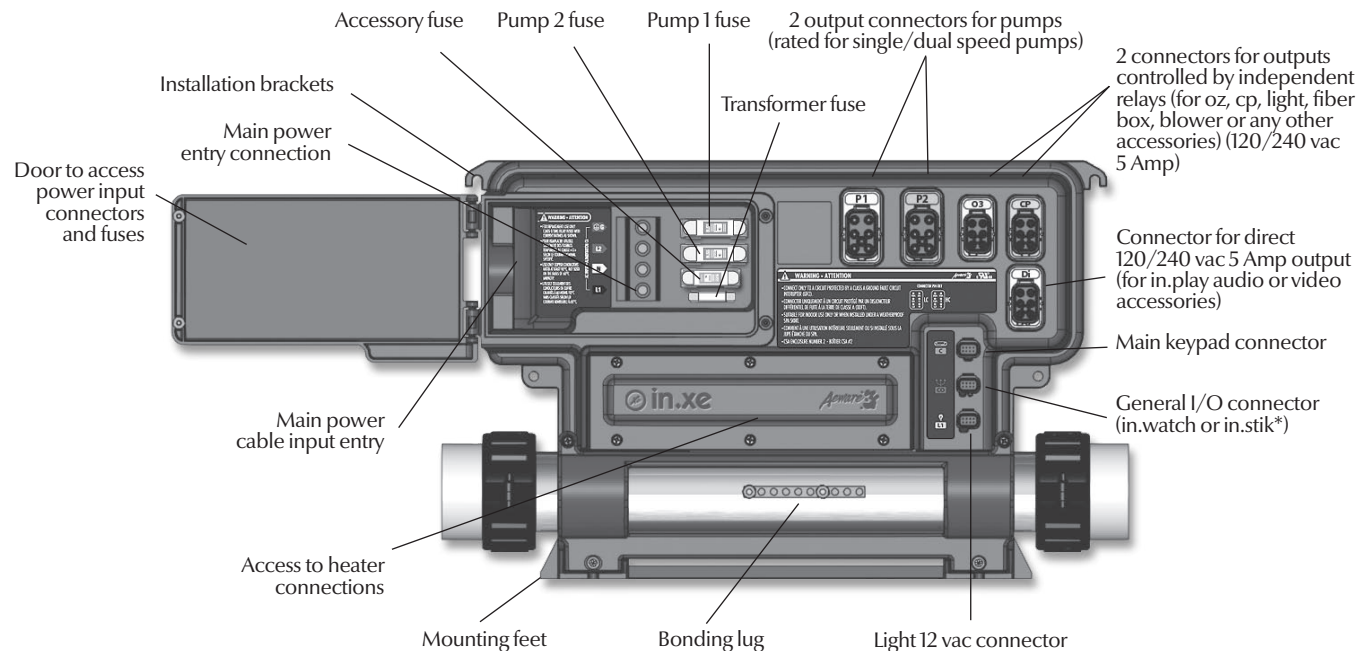
In.link: ingenious plugs and connectors



In.stick: automated software upload



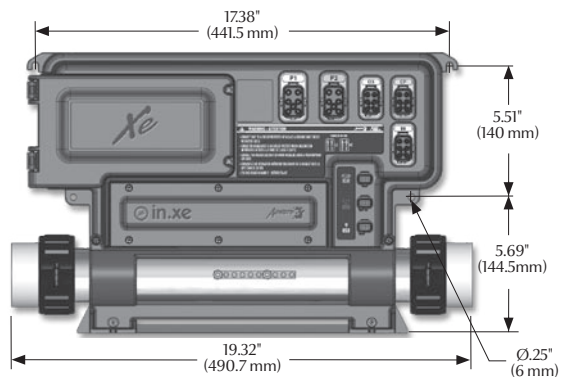
in.xe overview



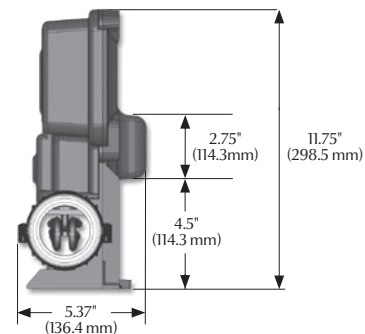


in.xe dimensions:

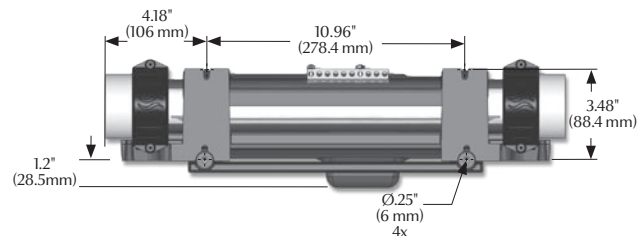
Front view



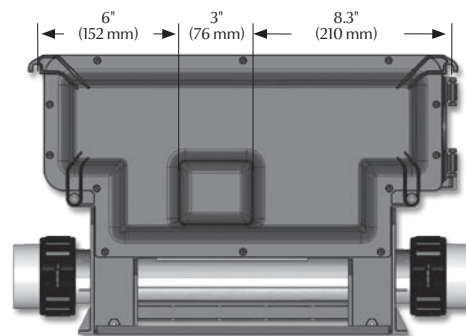
Side view



Bottom view

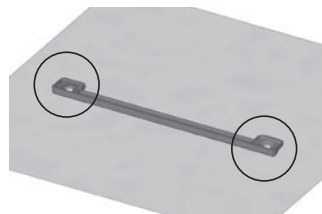


Rear view





Floor installation procedure

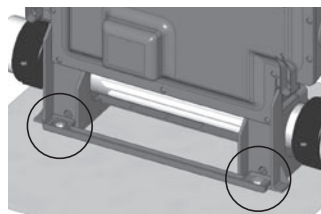


The following material is recommended:

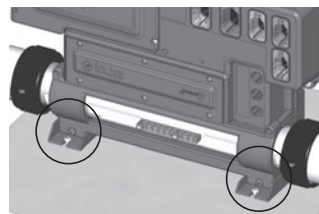
4- # 10 screws of appropriate length with round, truss or pan head.

4- washers 1/2 OD x 1/16" thickness.

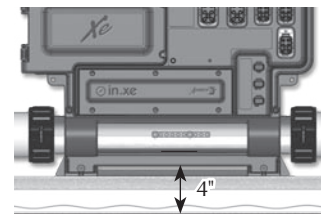
Select the most appropriate location on the floor for spa pack and firmly attach guide plate to wooden base with (2) screws backed by (2) washers.



Slide back side of the unit's feet into the guide plate. It should easily slide into place.



Now firmly attach unit to wooden base by using the remaining (2) screws backed by (2) washers to fix the front of the foot.



Note: The spa pack must be installed at least 4 inches above potential flood level. If floor is on ground level, pack should be raised at least 4 inches.

Warning:

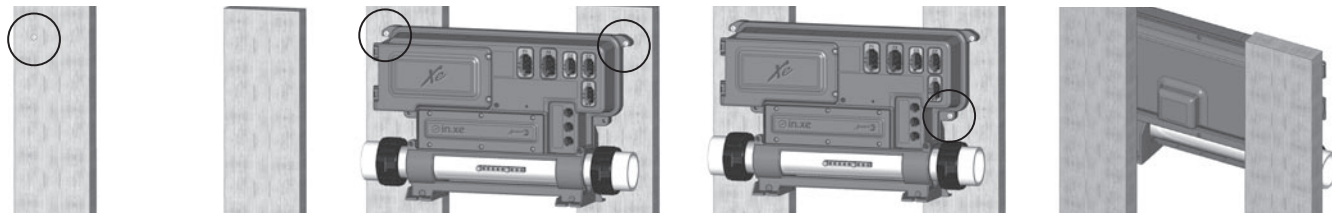
Beware the application of some products commonly used against corrosion (such as WD-40 family products) could damage the power box, due to a negative chemical reaction between some industrial oils and its plastic enclosure. Any other materials which may come in contact with the enclosure must be carefully evaluated under end use conditions for compatibility.

Important!

Please note that **countersunk** screws should **not** be used as they can damage the power box support.



Wall installation procedure



The following material is recommended:

4- # 10 screws of appropriate length with round, truss or pan head.
4- washers 1/2 OD x 1/16" thickness.

Use two (2) standard 2 x4 or 2x6 wall studs, spaced on 16-inch centers to affix the spa pack. Firmly attach, one at the time, upper mounting holes on each side of the spa pack with (2) screws backed by (2) washers.

In the case of a flat wooden surface: select the most appropriate location on wall for the spa pack. A square cut-out of about 4-inch per side will be needed to allow the transformer to fit through it (see page 7 for more details).

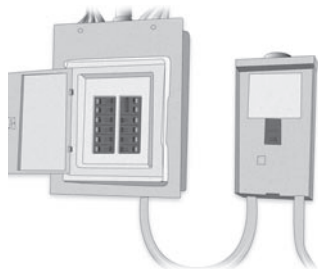
Firmly attach, one at the time, upper mounting holes on each side of the spa pack with two (2) screws backed by two (2) washers.

Firmly attach lower mounting holes on each side of the pack with the (2) remaining screws and (2) washers.

Note: Make sure these (2) screws and (2) washers are installed. They will make the pack stable when input, outputs and accessory connectors will be manually inserted in their ports.

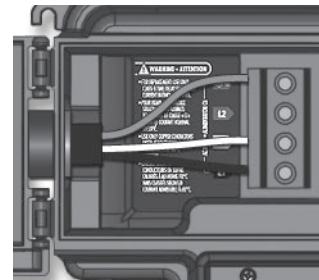
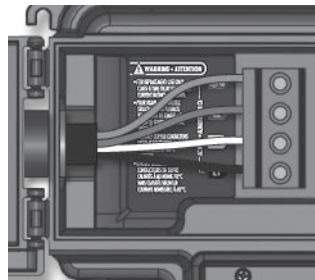
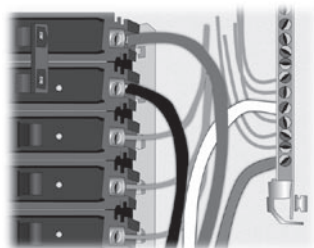


Electrical wiring



Main electrical box

GFCI panel



Warning!

"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".

For 240 VAC (4 wires)

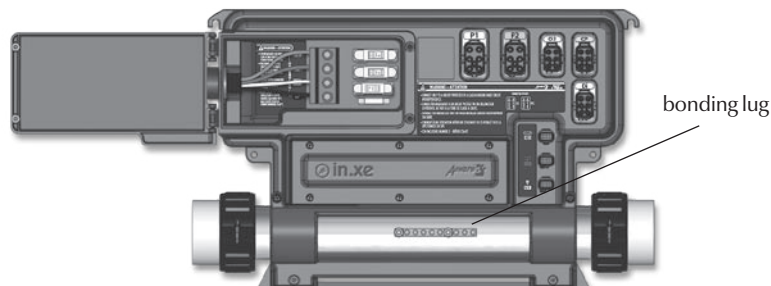
Correct wiring of the electrical service box, GFCI, and pack terminal block is essential. Call an electrician if necessary.

For 120 VAC (*3 wires)

*If connected to a 3 wire system, no 240 VAC component will work.



Electrical wiring



Warning!

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.

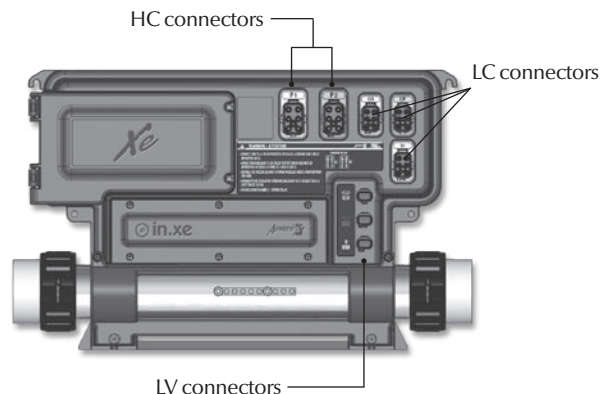
To install the wiring for the in.xe spa control, you'll need a Phillips screwdriver and a flat screwdriver.

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 cutout of the box and secure it with a strain relief (1" NTP 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.

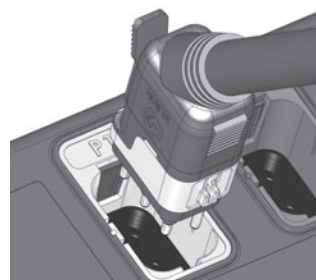
Connect the bonding conductor to the bonding lug on the front of the in.xe spa pack (a grounded electrode conductor shall be used to connect the equipment grounding conductors).



in.link connectors

In.xe features in.links connectors with colored and tagged polarizers. This new plug and connector technology has been specifically designed for easy and safe assembly. The tags are interchangeable depending on the output; the polarizers are designed to avoid misconnections.

In.link connectors are easily and conveniently accessible from the front of the 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 inputs and output devices.



They all include an integrated latch that keeps them safely in place and provides audible and tactile feedback when properly connected.

Finally, colored and tagged polarizers provide a definite advantage in reducing SKU numbers and inventory levels thus giving OEMs and dealers total flexibility to easily configure output devices.



in.stik: automated software upload

In.stik is a pen drive with in.link connector very similar to an USB memory stick. It connects to in.xe and contains data to program or configure the system. in.xe executes the data upload automatically.

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

in.k200

compact keypad for in.xe spa systems



Giving full control to wet fingers!



Aaware 
by gecko





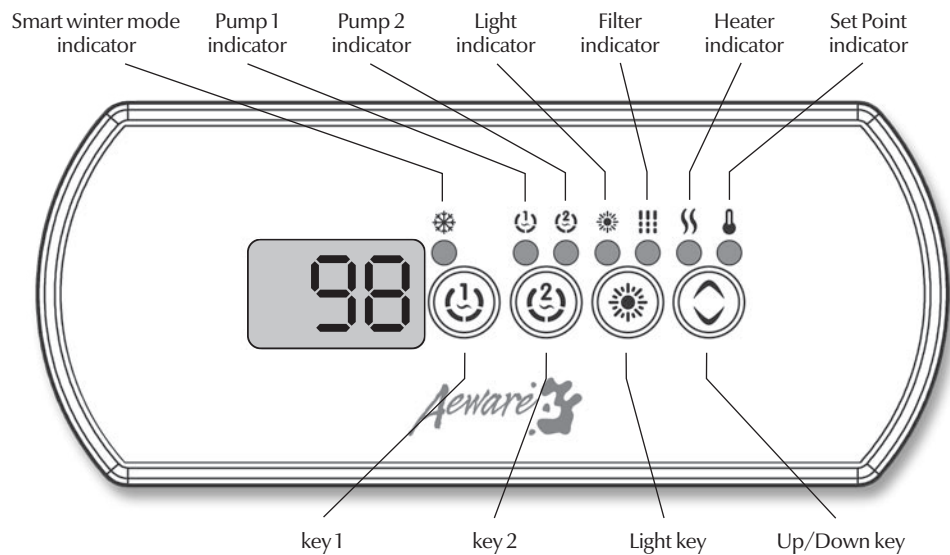
in.k200

Compact series of entry-level keypads that gives complete control to wet fingers!

In.k200 is a compact keypad designed to be used with Aeware's in.xe spa systems.

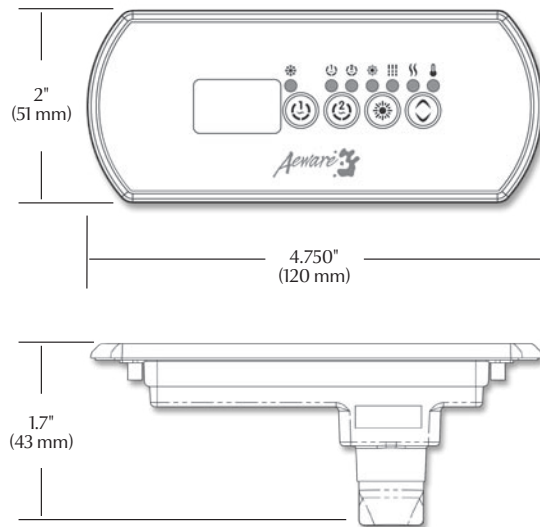
This new series of entry-level keypads comes in a waterproof plastic enclosure and it's available in dual pump or pump/blower configurations.

Easy to install, in.k200 comes with an in.link connector.





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:
120 mm x 51 mm x 43 mm
(4.75" x 2" x 1.7") Soft gasket

Standards: UV resistance (ASMT D4329)

UL, CSA, TUV and CE

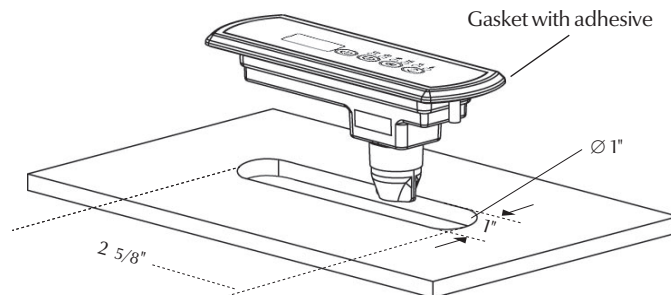
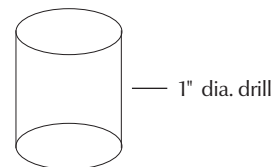
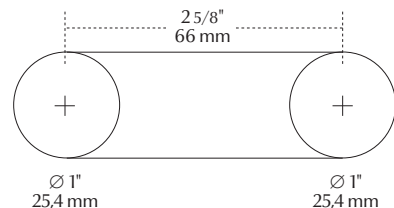
Specifications and design are subject to change without notice.



Installing the in.k200

The keypad should be installed directly onto the spa (or very close to it) so that it is easily accessible to the user.

- To install the in.k200, drill two 1" (25 mm) diameter holes at 2 5/8" (67 mm) from center to center as illustrated.
- Cut out the material between the two holes (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.

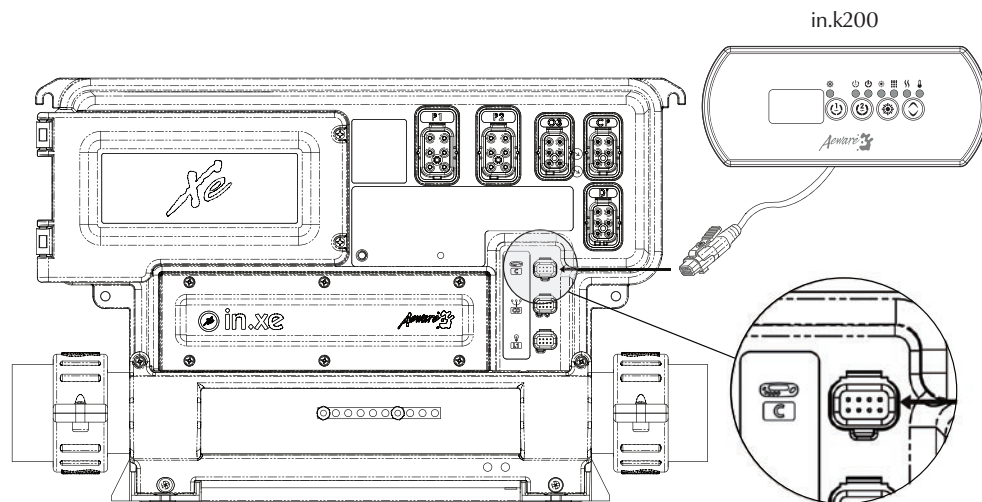




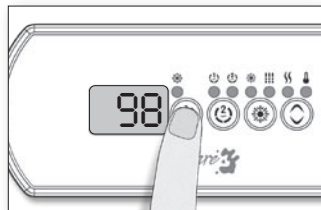
Connecting in.k200 main keypad to in.xe

The in.k200 comes with a 10 ft cable and an in.link connector.

To connect the in.k200, simply insert its in.link connector into the appropriate keypad connector (as illustrated).



Connect the main keypad in.k200 as indicated here.

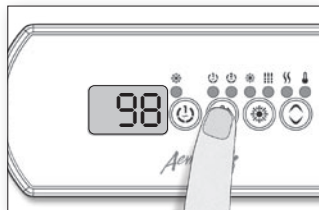


Key 1

Press Key 1 key to turn Pump 1 on at low speed. Press a second time to turn pump to high speed (with a dual-speed pump). A third time turns pump off.

A built-in timer automatically turns pump off after 20 minutes, unless pump has been manually deactivated first.

The "Pump 1" indicator lights up when Pump 1 is on. With dual-speed pump, indicator will flash when Pump 1 is on at low speed.

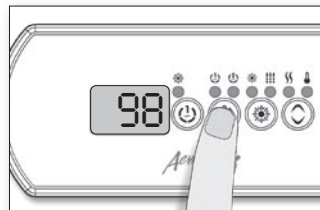


Key 2 (2 Pump)

Press Key 2 key to turn Pump 2 on. Press a second time to turn pump off.

A built-in timer automatically turns pump off after 20 minutes, unless pump has been manually deactivated first.

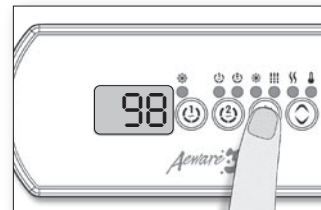
The "Pump 2" indicator lights up when Pump 2 is on.



Key 2 (2 Pump/Blower)

Press Key 2 to turn Pump 2 on at high speed. Pressing a second time turns blower on. A third press turns Pump 2 off but leaves blower on. A final press turns blower off. A built-in timer automatically turns Pump 2/blower off after 20 minutes, unless Pump 2/blower has been manually deactivated first.

The "Pump 2" indicator lights up when Pump 2/blower is on.

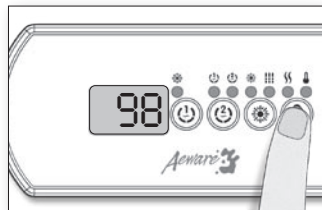


Light key

Press Light key to turn light on. Press Light key a second time to turn light off.

A built-in timer automatically turns light off after 2 hours, unless it has been manually deactivated first.

The "Light" indicator lights up when light is on.



Up/Down keys

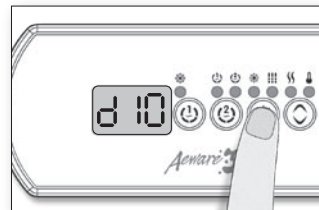
Use Up or Down key to set desired water temperature. The temperature setting will be displayed for 5 seconds to confirm your new selection.

The "Set Point" icon indicates that the display shows the desired temperature, NOT the current water temperature!

Programming filter cycles

Depending on system configuration the system performs either purge cycles or filter cycles.

To program the filter cycles, you must enter these parameters: duration and frequency. During a filter cycle, pumps & blower run at high speed for one minute to purge the plumbing. Pump 1 or CP then runs at low speed for the remaining of the cycle.



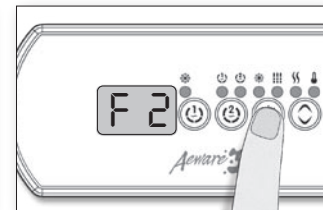
Setting filter cycle duration

Press and hold Light key until the display shows dxx, with "xx" representing the duration in hours. (Default: 2 hours).

Use Up or Down key to change setting.

0 = no filtration
24 = continuous filtration

Note: it's not recommended to set this to "0".



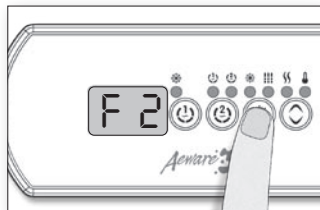
Filter cycle frequency

Press Light key again. The display will show Fx, with "x" representing the number of filter cycles per day (up to 4). (Default: twice a day).

Use Up or Down key to change setting.

When the desired setting is displayed, press Light key to confirm. A filter cycle will start immediately.

The "Filter" indicator lights up when a filter cycle is on.



Programming purge cycles

To program the purge cycles, you must select the frequency. During a purge cycle, all pumps and the blower run for one minute.

Purge cycle frequency

Press and hold Light key until the display shows Fx, with "x" representing the number of purge cycles per day (up to 4).

Use Up or Down key to change setting.

When the desired setting is displayed, press Light key to confirm. A purge cycle will start immediately.

The "Filter" indicator lights up when a purge cycle is on.

Water temperature regulation

In a regulation cycle, the system first generates water flow through the heater housing and the plumbing, in order to ensure accurate water temperature readings as well as avoiding heater activation in dry conditions.

After verifying pump activation and taking a water temperature reading if required, the system automatically turns the heater on to reach and maintain water temperature at Set Point.

The "Heater" indicator lights up when the heater is on. It flashes when there is a request for more heat but the heater has not yet started.

Smart Winter Mode

Our Smart Winter Mode protects your system from the cold by turning pumps on several times a day to prevent water from freezing in pipes. The "Smart Winter Mode" indicator lights up when the Smart Winter Mode is on.

Cooldown

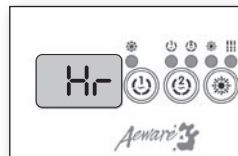
While performing this task, the heater is not allowed to turn on and its icon flashes.



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. Both the error code and the water temperature are alternatively displayed.

All errors codes will be displayed on the keypad display.



Hr

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



HL

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



Aoh

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

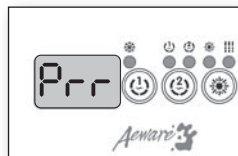
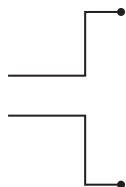


FLO

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



in.xe error codes

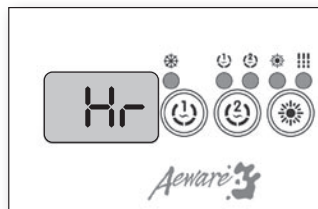
**Prr**

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

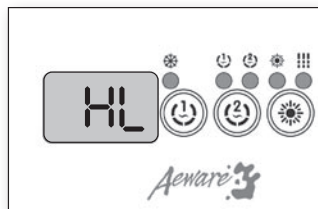
**oh**

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

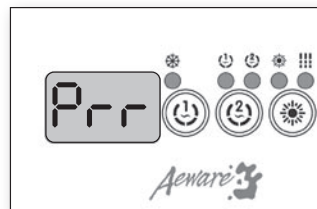
Specifications subject to change without prior notice

**Hr**

- Restart the spa pack and start & stop all pumps and blower.
- If error reappears, replace in.xe spa pack.

**HL**

- Restart the spa pack.
- If error persists, measure the temperature with a DIGITAL thermometer and compare its reading with temp. on the display. Make sure the temp. reading is lower than 119°F.
- If problem persists, replace pack.

**Prr**

- Verify if regulation probe (located above the heater) is properly connected.
- Replace in.xe heater if problem persists.

**Aoh**

- Remove spa skirt and let system cool down, until the error clears.



oh

- Measure the temperature with a DIGITAL thermometer and compare its reading with temp. on the display. If temp. reading is different, replace heater.
- Remove spa cover and let spa cool down.
- Add cold water and lower filter cycles.
- If problem persists replace pack.

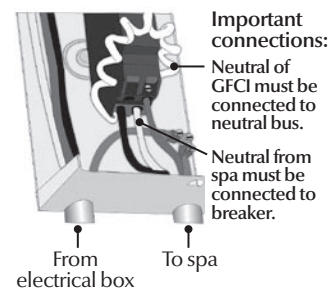
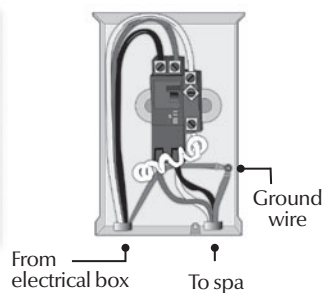
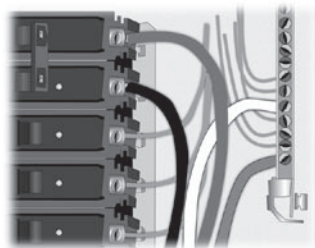
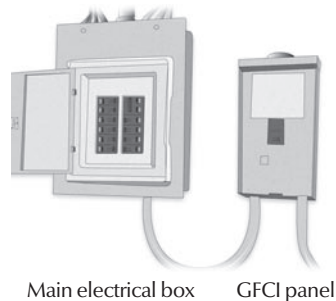


FLO

- Make sure water valves are open and that water level is high enough.
- Check and remove anything obstructing the filter.
- Make sure there are no air locks (or that no object obstructs the passage of water in the heater channel). Pumps may make strange noises.

Follow air lock procedure to clear them.

- Make sure that the pump associated to the heater is running.



Warning!

There are different GFCI models used on the market. See manufacture's instructions that come with the GFCI for specific information. Note that all illustrations are examples only.

Verify if GFCI is properly connected.

If it's not, verify GFCI diagram and reconnect it.

Verify in.xe pack wiring (make sure that the neutral and the ground have not been inverted).

If the GFCI is properly connected but still tripping, unplug all outputs from the spa pack (pumps, blower, heater, ozonator etc).

Reconnect one output at the time until the GFCI trips again.

Replace defective component.

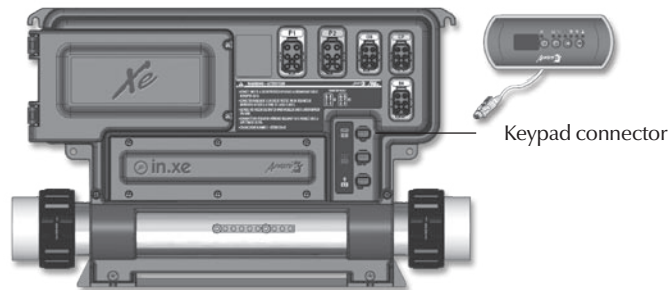
Note: If the neutral of the GFCI is hooked up to the neutral bar, the in.xm spa control will only trip when the 120v outputs are fired (e.g.: the ozonator)



Keypad doesn't seem to work!

If a keypad doesn't seem to work:

- Verify keypad connections and try spare keypad.
- Replace keypad if problem is corrected.
- Replace in.xe if problem is not corrected.



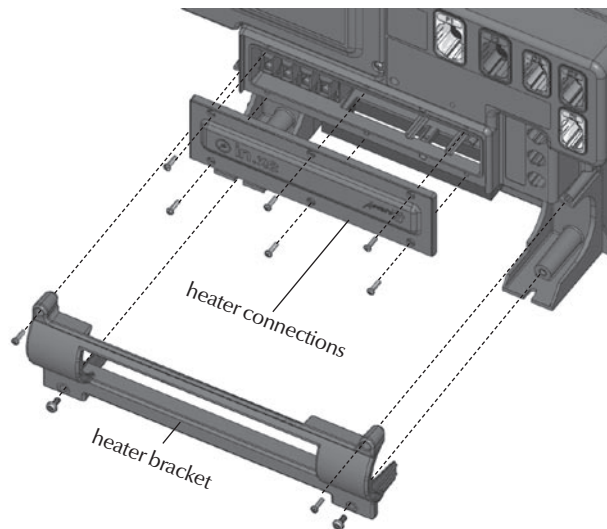
**Warning!**

Before starting removal procedure be sure to:

- Turn off electric power to the the unit.
- Ensure spa water valves are closed (or that the spa is drained).

Using a Phillips screwdriver, loosen the six (6) screws that hold the heater connections door in place. Once the screws are removed, disengage the heater connections door.

Loosen and remove the four (4) screws and disengage the heater bracket.





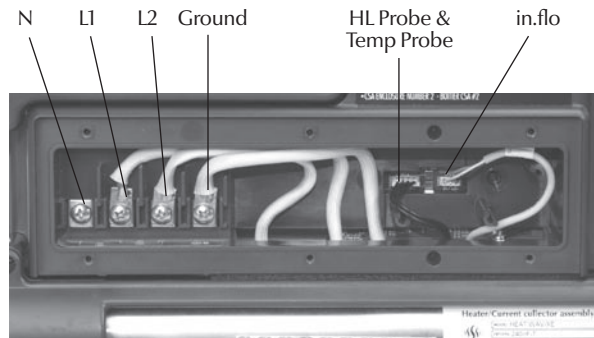
Use a Phillips screwdriver to loosen the terminals and remove all electrical heater connections:

Neutral Line (N), Line 1 (L1), Line 2 (L2) and Ground Line (Ground).

Manually remove the HL probe & Temp. probe connector.

Manually remove in.flo connector.

Be careful not to damage any connector by twisting or pulling too hard.

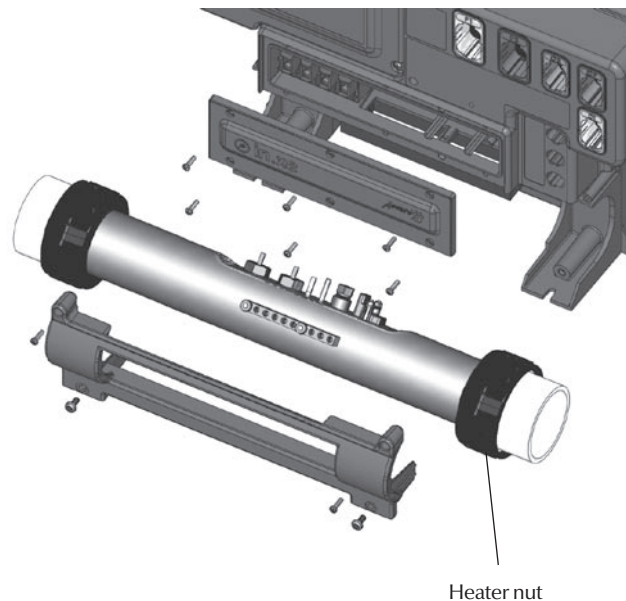




After disconnecting all electrical heater connections, loosen and remove the two (2) heater nuts retaining the heater.

Disengage heater from in.xe pack by slightly twisting in such way that the bottom of the heater comes out first and pull the heater away from the pack.

Replace the defective heater with a new one, and repeat the same procedure in reverse order to reconnect replacement heater to the in.xe pack.





Advanced electronics! Water resistance!



Aeware 3
by gecko

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