TechBook

in.grid

A flexible way to control external heat sources for your spa

Select, use and synchronize alternative heat sources

Benefit from energy savings

Connect up to five single button switches

GECKO®

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Safety instructions

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS ON THE BACK OF THE ENCLOSURE. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the service literature accompanying this appliance.

IMPORTANT SAFETY INSTRUCTIONS:

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance from and prolong the life of the unit:

* READ THESE INSTRUCTIONS.

* KEEP THESE INSTRUCTIONS.

* HEED ALL WARNINGS.

* FOLLOW ALL INSTRUCTIONS.

* CLEAN ONLY WITH DRY CLOTH. BEWARE THE APPLICATION OF SOME PRODUCTS COMMONLY USED AGAINST CORROSION (SUCH AS WD-40 FAMILY PRODUCTS) AS THEY COULD DAMAGE THE ENCLOSURE, 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.

* DO NOT INSTALL NEAR ANY HEAT SOURCES. CLEARANCE AND MINIMUM DISTANCE BETWEEN THE VARIOUS PARTS OF THE APPLIANCE AND THE SURROUNDING STRUCTURE ARE NOT SPECIFIED AS LONG AS THEY ARE SUFFICIENT SO THAT THE AMBIENT TEMPERATURE AROUND THE APPARATUS DOES NOT EXCEED 140°F (60°C).

* ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

* UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

* REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. SERVICING IS REQUIRED WHEN THE APPARATUS HAS BEEN DAMAGED IN ANY WAY, SUCH AS POWER-SUPPLY CORD OR PLUG IS DAMAGED, LIQUID HAS BEEN SPILLED OR OBJECTS HAVE FALLEN INTO THE APPARATUS, THE APPARATUS HAS BEEN EXPOSED TO RAIN OR MOISTURE, DOES NOT OPERATE NORMALLY, OR HAS BEEN DROPPED.

* MUST BE ROUTED AWAY FROM HIGH-VOLTAGE CABLES

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Warnings

WARNINGS:

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

* DO NOT DISASSEMBLE OR ALTER THE APPARATUS.

* DO NOT USE FOAM TO ISOLATE THE UNIT.

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

* IN.GRID ENCLOSURE SHALL BE LOCATED ABOVE THE FLOOD ZONE WHERE IT'S UNLIKELY TO BE SUBMERGED IN THE EVENT THE SPA IS OVERFILLED (OR SIMILAR ABNORMAL CONDITION OCCURENCE).

* PRODUCT MUST BE DISPOSED OF SEPARATELY FROM NORMAL HOUSEHOLD IN ACCORDANCE WITH LOCAL WASTE DISPOSAL LEGISLATION.

* DO NOT SERVICE THIS PRODUCT YOURSELF

in.grid

A flexible way to control external heat sources for your spa

Our new system interface lets you select, use and synchronize alternative heat sources to efficiently keep the spa water warm. Also acts as a hub to connect up to five single button switches.

Connected to the Y series, in.grid gives you the advantages of using alternative heating sources. Connected to the CO port of your spa control system, in.grid will act as a dispatcher of external heating sources such as your heat pump or your central house heating system.

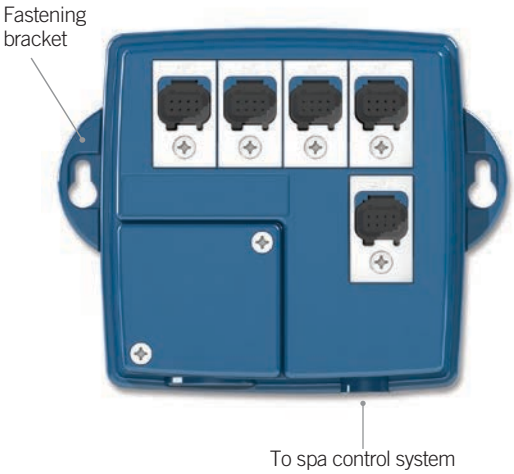
With in.grid, you can choose one of its four modes of operation that suits you the best, depending on your external heating system and your climate . Smart modes help you taking more advantage of your external heat source to optimize your savings.

in.grid also features ports to connect up to five single button switches to control your spa accessories.

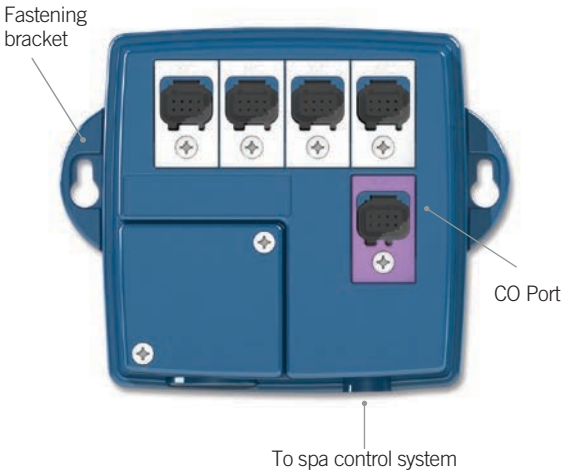
Overview

in.grid overview

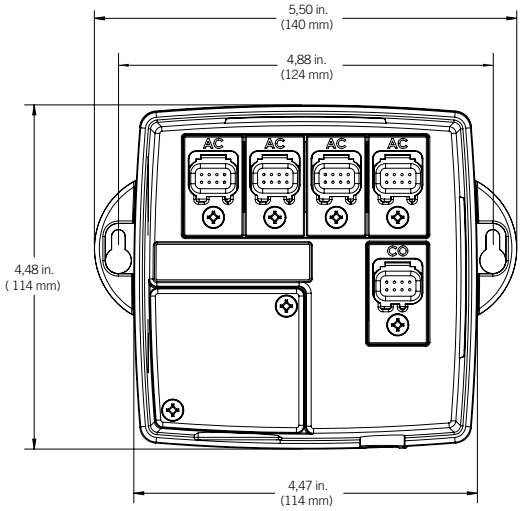
in.grid model
with 5 single button switches

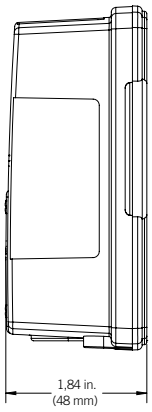


in.grid model
with 4 single button switches an 1 CO port



in.grid dimensions



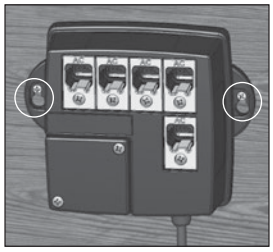


OEM installation

in.grid must be installed under the skirt, protected from outside weather.
This unit is connected to an in.ye or a in.yt spa control system.

We recommend that you install the unit with #8 pan head screws.

The unit must be installed in an upright position, as illustrated.



Connections

Turn off the power before connecting the in.grid to the spa control system.

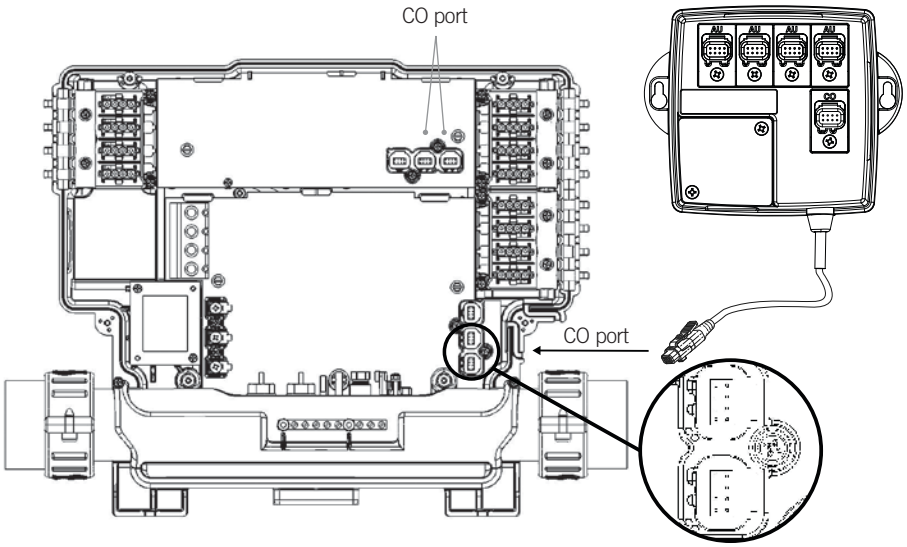
System connection

The in.grid does not need any external power supply or electrical connection.

For a basic system configuration, simply connect the in.link cable of the in.grid into a CO connector of a compatible spa control system.

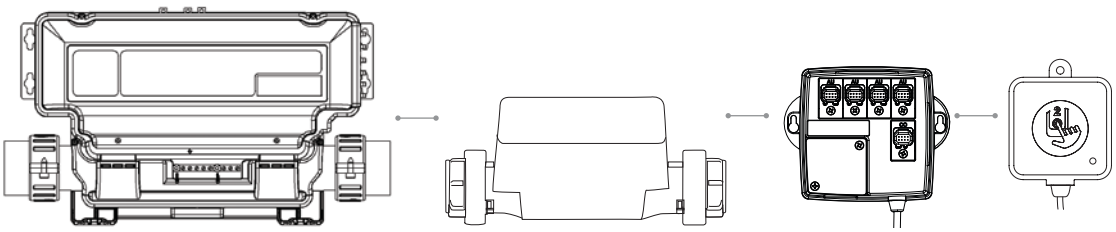
Compatibility

- in.grid is compatible with all in.yj, in.ye and in.yt versions.
- in.grid requires software core 61 revision 46 or higher to operate properly.



in.grid connection with accessories

If you have a lot of accessories, the in.link cable of the in.grid with 4 single button switches and a CO port can also be connected to any CO port of any device on the communication chain, like illustrated below, for example.



Please note if you have the in.grid with 5 single button switches model, this must be the last device on your communication chain because you don't have the CO port to daisy chain other devices.

Installation

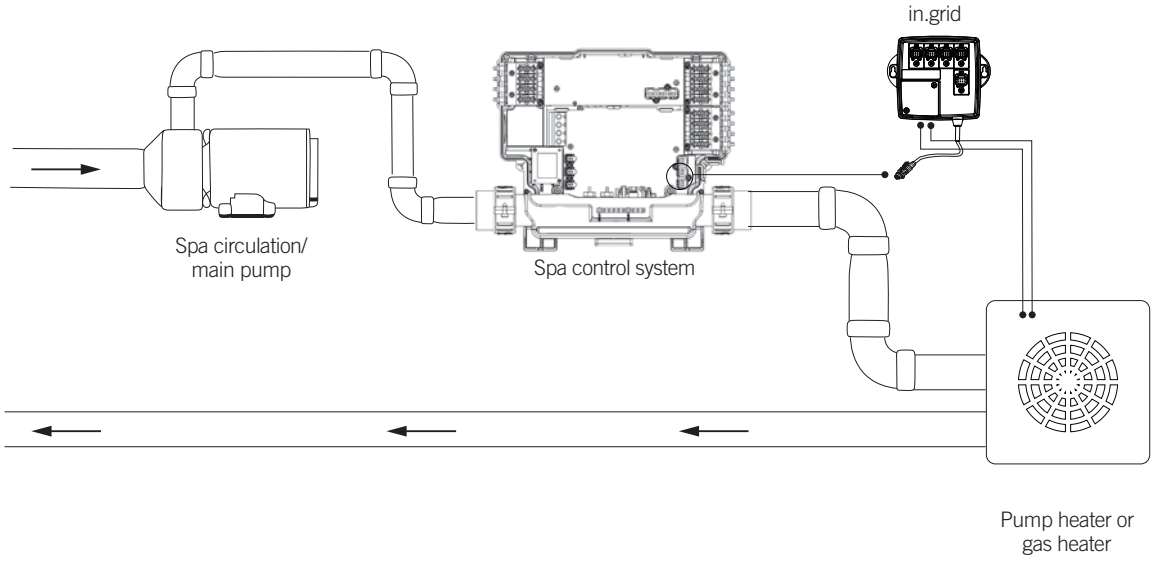
The in.grid provides a connection to a normally open dry-contact relay on a spring-loaded female connector. The connector accepts bare wire connections. The cable must be passed through the already installed watertight grommet. Use wire gage between AWG 24 and AWG 16.

Use cable with round jacket suitable for the watertight grommet. Diameter should be between 0.090'' and 0.250''.

The dry contact is rated for low voltage of maximum 24V and 4A.

to heat pump or central hot water system

Installation with external heat pump or gas heater



IMPORTANT: Your heat pump or gas heater must have all the flow and temperature limit protections.

Your heat pump or gas heater must be connected to your Y series spa control system. Make sure to always connect your external heating system in the same water pipe filter of your spa control system heater (as illustrated above).

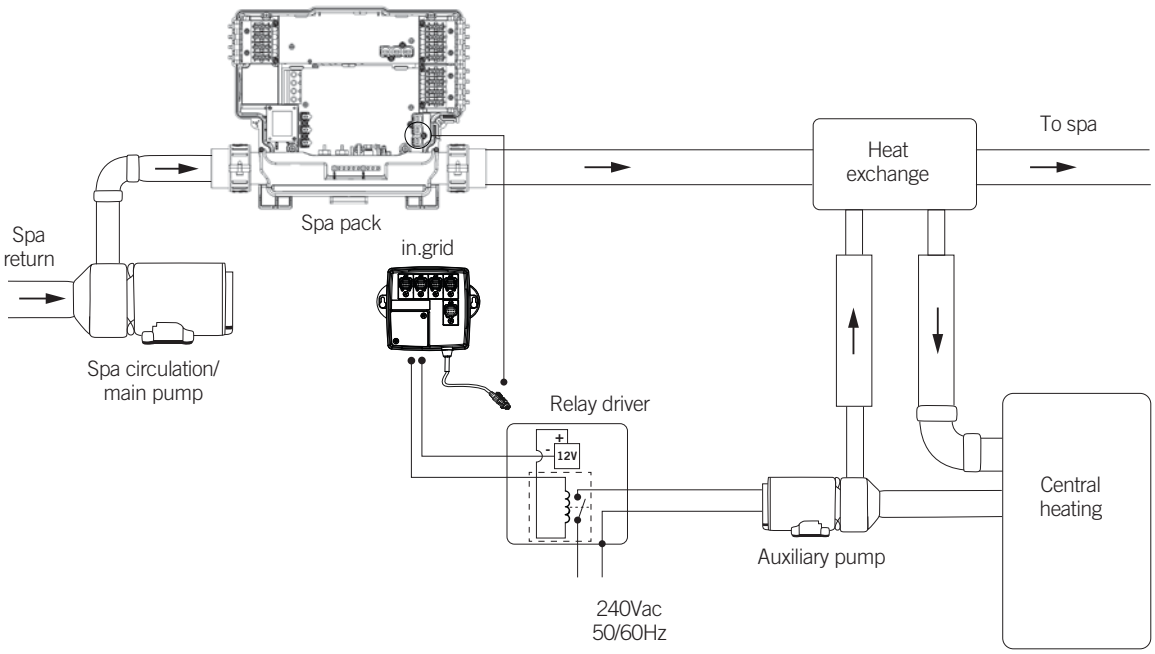
The unit must be installed after your spa control system (as illustrated above).

You need to be sure your pump heater or gas heater is set to the maximum set point temperature.
Your water temperature regulation will be controlled with your spa control system, by adjusting the set point on the spa keypad.

The in.grid dry contact should be hooked to the input for wire remote temperature control of the external heating system. Your voltage must be below 24 V.

If the in.grid controls are used with a gas heater, the remote temperature control input is usually called "fireman's switch".

Installation with a heat exchange unit



Please make sure your heat exchange does not have a flow restriction. The heater in your Y series spa control system needs a minimum of 20 GPM all the time.

Make sure to always connect your heat exchange unit in the same water pipe filter of your Y series spa control system heater.

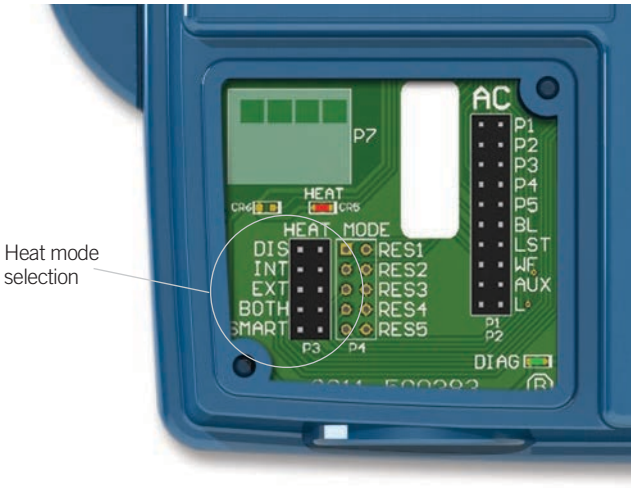
The dry contact of the in.grid must only control a low voltage line and is used to power a low voltage relay coil. Use a relay driver to power up the auxiliary pump low voltage.

Heat Mode Operations

You can choose between four different water regulation modes available. Your in.grid is automatically detected by the spa control system at power up. It will be ready to use with your preferred heat mode one minute following power up.

The relay contacts of the in.grid will be closed if the external heating system is activated. Otherwise, the relay contacts are open.

Your desired heat mode must be set by adding a jumper on one of the five (5) different positions.



***Note:** Your heat mode selection can be changed with the in.touch 2 app on your mobile device. On your app, any new selection will override the jumper setting of the in.grid. The in.touch 2 app will automatically detect the in.grid presence and will adapt its menu configuration as required.

Heat Mode Operations

Five available heat modes are offered with in.grid:

1- DIS (Disabled)

Use this mode if the spa configuration does not have any external heating system and only the single switch functionalities are used. This will avoid in.touch 2 application on a mobile device to display the Heat Mode Selection menu*. The spa controller will regulate the water temperature using the standard resistive heater. The single button switches will control the different spa accessories according to the AC jumper selections.

IMPORTANT: This mode can only be set with the heat mode jumpers.

2- INT (Internal)

This mode provides an easy way to revert back to standard water regulation using the internal heater in case of problem with the external heating system.

*This mode can be set with your in.touch 2 app on a mobile device without the need to open the spa skirt to change the jumper setting on the in.grid. Thanks to your in.touch 2, it will be easier to set your preferred heating mode back once the external heating system is available.

3-EXT (External)

Use this mode for a maximum energy saving purpose. The spa control system will only use your external heating system to regulate the water temperature. In normal operation, the internal heater will never be activated.

*This mode can be set with your in.touch 2 app on a mobile device without the need to open the spa skirt to change the jumper setting on the in.grid.

Freeze Protection

Freeze protection has been added because EXT (EXTERNAL) mode does not allow the activation of the internal heater. In cold weather, if it becomes impossible to keep the water over freezing point, the help of the internal heater will then be needed. This is the only time the freeze protection will come in.

At any time, if the water temperature drops to 40°F (4.5°C), the resistive heater will give a boost to avoid freezing. The freeze protection will stay active until water temperature reaches the minimum allowed set point (usually 59°F / 15°C). Normal EXT mode will resume functioning thereafter.

4- BOTH (Both systems all at once)

Use this mode for swim spas or large spas, which have bigger needs of energy to keep the water temperature at the desired set point.

The spa control system will always use the external heating system AND the internal heater simultaneously to regulate the water temperature; they are both activated or deactivated at the same time.

*This mode can be set with your in.touch 2 app on a mobile device without the need to open the spa skirt to change the jumper setting on the in.grid.

5- SMART (Energy savings)

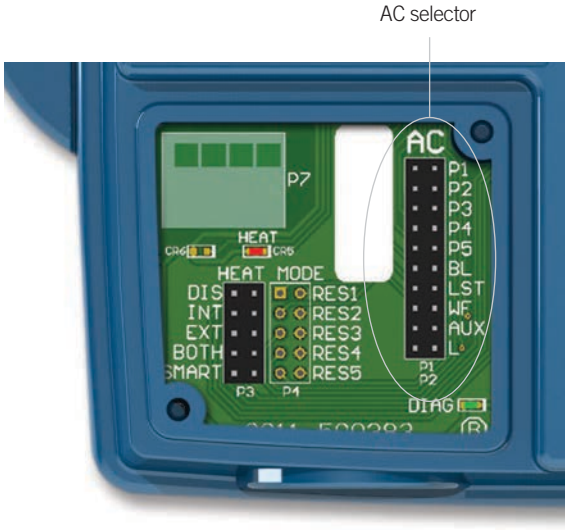
Use this mode for a better energy saving purpose, combined with a maximum water temperature regulation efficiency. The spa control system will always use the external heating system to regulate the water temperature. If the temperature falls too far below your set point (-2.5°F), the internal heater will be activated momentarily to help your external heating system reach the set point.

*This mode can be set with your in.touch 2 app on a mobile device without the need to open the spa skirt to change the jumper setting on the in.grid.

in.k110 and Accessories Functionalities

Your in.grid offers the possibility to control the spa accessories with four or five in.k110 switches, according to your model. The standard model has four (4) accessory connectors to use with four (4) in.k110 switches. A 5-accessory connectors model is also available to use with five (5) in.k110 switches.

Select your preferred in.k110 functions with up to four or five jumpers, conforming to your in.grid model. Each jumper represents a key function and you may install them on different positions.



The accessories selected by each jumper will be assigned to each AC output connectors available at the front. The AC jumper line goes from top to bottom, and the AC connector line goes from left to right.

e.g.: If your first jumper on your AC selector line is P2, it will be associated to the first AC connectors on your left for your in.k110.

Accessory (AC) jumper	Function
P1	Pump 1
P2	Pump 2
P3	Pump 3
P4	Pump 4
P5	Pump 5
BL	Blower
LST	Last pumps and blower*
WF	Waterfall
AUX	Auxiliary
L	Lights**

* LST position gives you the possibility to control more than one accessories with the same key.
e.g.: If the previous jumper is at P2 position, the LST key will control pump 3, pump 4, pump 5 and blower in sequence. If an accessory is not installed, it will be skipped.

**If there is two light output installed, 12 V lights and 120 V ac lights, they will be controlled in sequence.

Default Settings

in.grid comes with default settings for each model as seen here:

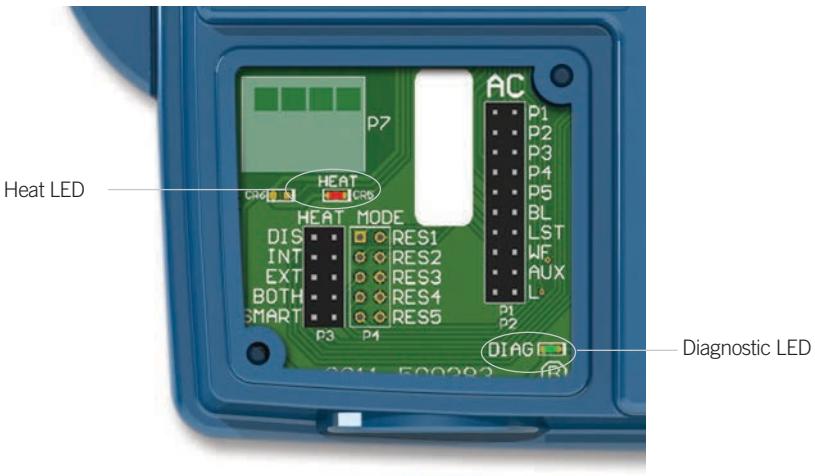
in.grid 4 AC and CO model
(Part #0608-521033)

Accessory (AC) jumper	Settings
AC #1	P1
AC #2	P2
AC #3	LST
AC #4	L
Heat Mode	DIS (Disable)

in.grid 5 AC model
(Part #0608-521034)

Accessory (AC) jumper	Settings
AC #1	P1
AC #2	P2
AC #3	P3
AC #4	P4
AC #5	P5
Heat Mode	DIS (Disable)

Troubleshooting



Diagnostic LED

The diagnostic LED will help you with the status of the connection between the spa control system and the in.grid.

Blinking light: Spa control system not detected, not compatible or in Disable mode if one of your single switches doesn't operate properly.
Solid light: Spa control system detected
No light: Power Off

Heat LED

Solid light: Relay contacts close and external heating system on.
No light: Relay contacts open and external heating system off.

Specifications

Environmental	
Operating temperature:	-4˚F (-20˚C) to 140˚F (60˚C)
Storage temperature:	-22˚F (-30˚C) to 185 ˚F (85˚C)
Humidity:	70% Max
Water resistance:	IPX5

Mechanical	
Weight:	0,85 lb
Dimensions (W x H x D):	5.50" x 4.48" x 1.84"

Compatibility

in.yj, in.ye and in.yt spa control systems with appropriate software revision.

Applicable standards	
UL	1563
CAN/CSA	C22.2, No. 218.1-M89
	CE EMC 2014/30/EU

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