TP200 PANEL

User Guide

Standard Menu

Your Single Source Solution

42369 Rev A1

BALBOA water group

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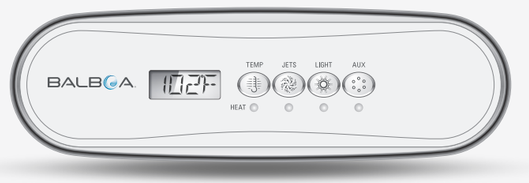
This user guide applies to
TP200, TP240 and TP260 panels.

TP200 PANEL

TP240 PANEL

TP260 PANEL



BP CONTROL SYSTEM

Software Version: 7.0 and later

TABLE OF CONTENTS

SEQUENCE KEY

RED LCD CHARACTERS
Red indicates flashing or changing characters. For example, these segments flash when you press the TEMP button to change the Set Temperature.

BLUE LCD CHARACTERS
Blue indicates an alternating message or a progressive message. When you view Time-of-Day, this progressive message appears.

TEMPERATURE BUTTON
The TEMP button icon indicates an "action." For example, pressing the TEMP button initiates any one of the following actions: adjusting the Set Temperature, menu navigation, setting the Filter Cycle Time, setting the Heat Mode, etc.

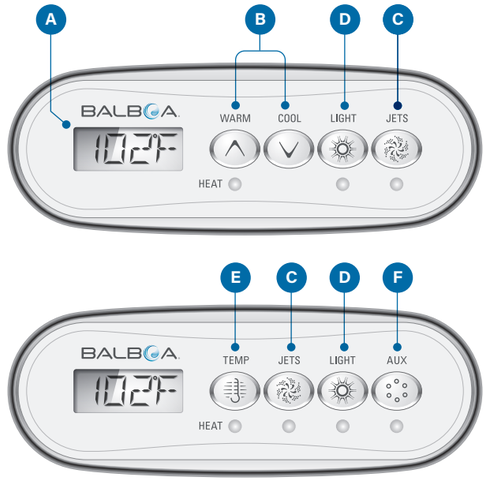
LIGHT BUTTON
The LIGHT button icon indicates navigation or a selection.

HOLLOW DOTS
Hollow dots indicate that your last setting was not saved. For example, when you set a feature such as Time-of-Day, you need to press the LIGHT button to save your setting. If you do not press the LIGHT button, the Main Screen will appear automatically after a few moments, and your last setting will not be saved.

SOLID DOTS
Solid dots indicate that your last setting will be saved. For example, if you change the Set Temperature and pause a few moments, the Main Screen will appear automatically, and your setting will be saved. The same applies to other features that will be discussed later.

DASHED LINE AROUND THE DISPLAY
Dashed lines indicate a Menu item that depends on a manufacturer configuration and may or may not appear.

PANEL INTERFACE & TERMINOLOGY



Main Screen

The Main Screen (A) displays the water temperature by default. The water temperature does not flash. If you press the TEMP button, the water temperature is replaced by the Set Temperature. The Set Temperature flashes.

Set Temperature

The Set Temperature is programmed by you. If you start at the Main Screen and press the TEMP button, the Set Temperature will appear, and it will be flashing. At this point you can do two things: One, you can change the Set Temperature. Two, you can navigate menus by pressing the LIGHT button. If you do not press any buttons for a few moments, the Main Screen will appear automatically.

TEMP

TEMP is an umbrella term that refers to panel buttons that control temperature. For example, TEMP refers to these buttons (B)(E).

TEMP Button(s)

In addition to controlling the Set Temperature, use the TEMP buttons to initiate actions while changing various settings.

LIGHT Button

In addition to turning On/Off the spa lights, use the LIGHT button (D) to navigate menus. Also, when you change settings such as Time-of-Day or Filter Cycle duration, make sure you press LIGHT to save your settings. If you don't press LIGHT, the Main Screen will appear automatically and your setting will not be saved in most cases.

JETS Button

The JETS button (C) will control a one-speed pump or a two speed pump. It depends on how your spa is configured.

AUX Button

Control an auxiliary device, such as a pump or a blower (F).

MAIN MENUS & NAVIGATION

Follow this sequence to navigate the Main menu.

If you are navigating any of the menus and decide you want to go back to the Main Screen, simply pause a few moments. The Main Screen will appear automatically.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for "action"
- Press LIGHT button to "select"
- ○○○ Pause / back to Main Screen / setting not saved
- ●●● Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE

Main Screen — 98F

Press the TEMP button. The Set Temperature will appear and flash. — 102F

While the Set Temperature is still flashing, press the LIGHT button.

Temperature range — TR:LO

Heat Mode — RDY

Time-of-Day — TIME / 8:57 / PM

Flip Display — FLIP

Lock Panel & Settings
Lock Temperature — LOCK

Hold Function — HOLD

Filter Cycle 1 — F 1

Filter Cycle 2 — F 2

Preferences — PREF

Utilities — UTIL

SET TIME-OF-DAY

Be sure to set the Time-of-Day

Setting the Time-of-Day can be important for determining water filtration times and other background features.

In this example we will change the Time-of-Day from 8:57 PM to 7:30 PM. Follow the same sequence to set the Time-of-Day for your spa.

If Time-of-Day has not been set, SET TIME will flash on the display in the TIME menu.

You can choose a 12-hour or 24-hour time display (See Page 44). CE control systems default to a 24-hour time display.

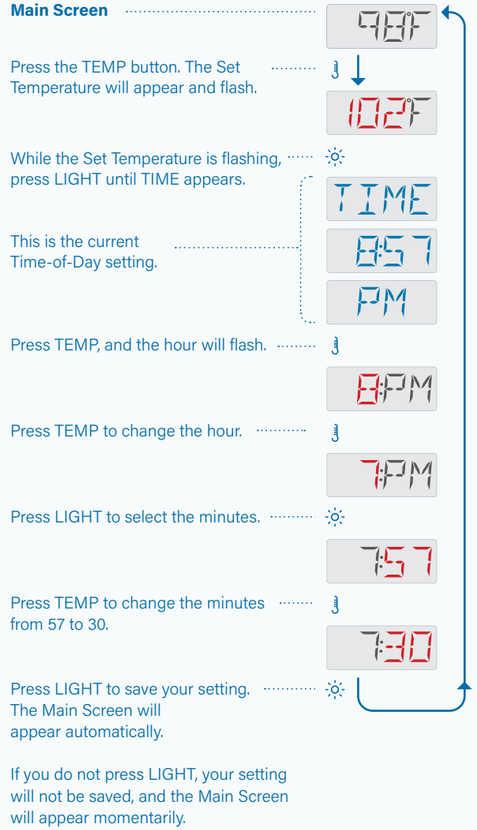
NOTE:

This note refers to systems that do not keep track of Time-of-Day when powered down.

If power is interrupted to such systems, Time-of-Day is not stored. The system will still operate and all other user settings will be stored. If filter cycles are required to run at a particular time of day, resetting the clock will return the filter times to the actual programmed periods.

When such a system starts up, it defaults to 12:00 Noon, so another way to get filter times back to normal is to start up the spa at noon on any given day. SET TIME will still flash in the TIME Menu until the time is actually set, but since the spa started at noon, the filter cycles will run as programmed.

SEQUENCE



CHANGE THE SET TEMPERATURE

Change the Set Temperature

When using a panel with WARM and COOL temperature buttons, pressing either WARM or COOL will cause the Set Temperature to flash. Pressing a temperature button again will adjust the Set Temperature in the direction indicated on the button. When the LCD stops flashing, the spa will heat to the new Set Temperature when required.

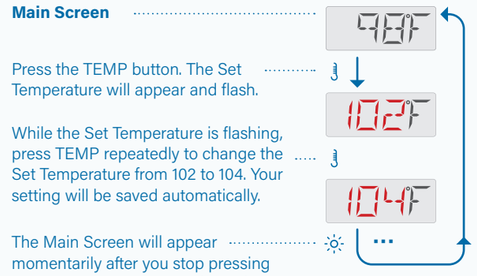
If the panel has a single temperature button, pressing TEMP will cause the Set Temperature to flash. Pressing TEMP again will cause the Set Temperature to change in one direction (e.g. UP). After allowing the display to stop flashing, pressing the TEMP button will cause the Set Temperature to flash and the next press will change the Set Temperature in the opposite direction (e.g. DOWN).

You can choose an °F or °C temperature display (See Page 42). CE control systems default to °C.

Press-and-Hold

If a Temperature button is pressed and held when the Set Temperature is flashing, the Set Temperature will continue to change until the button is released. If only one Temperature button is available and the limit of the Temperature Range is reached when the button is being held, the progression will reverse direction.

SEQUENCE



SET FILTER CYCLE TIMES

Main Filtration

Filter cycles are set using a start time and a duration. Hours are adjusted in 1-hour increments, and minutes are adjusted in 15-minute increments. The end time is calculated and displayed automatically.

Filter Cycle 1

In this example, we will do the following:

- View the current start time
- View the duration
- Set the start time to 8:00 PM
- Set the duration to 3 hours

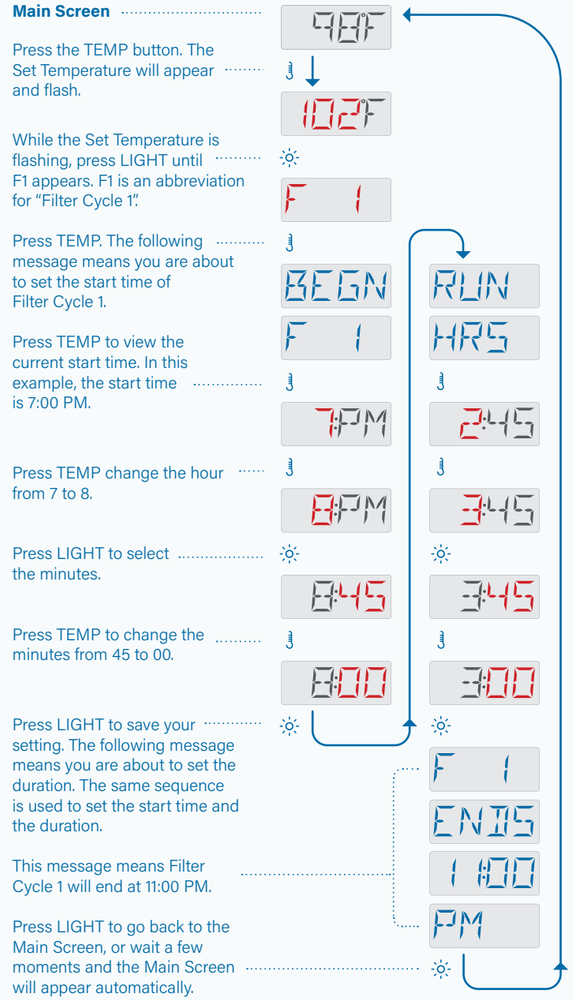
This means Filter Cycle 1 will end at 11:00 PM. Follow the same sequence to set Filter Cycle 1 for your spa.

View the next page to set the start time and duration for Filter Cycle 2.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for "action"
- Press LIGHT button to "select"
- ○○○ Pause / back to Main Screen / setting not saved
- ●●● Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



SET FILTER CYCLE TIMES

Filter Cycle 2

In this example, we will do the following:

- Turn On Filter Cycle 2
- View the current start time
- View the duration
- Set the start time to 8:00 AM
- Set the duration to 3 hours

This means Filter Cycle 2 will end at 11:00 AM. Follow the same sequence to set Filter Cycle 2 on your spa.

Filter Cycle 2 is optional. It is Off by default on most control systems. However, you can turn it On if you like.

It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.

Purge Cycles

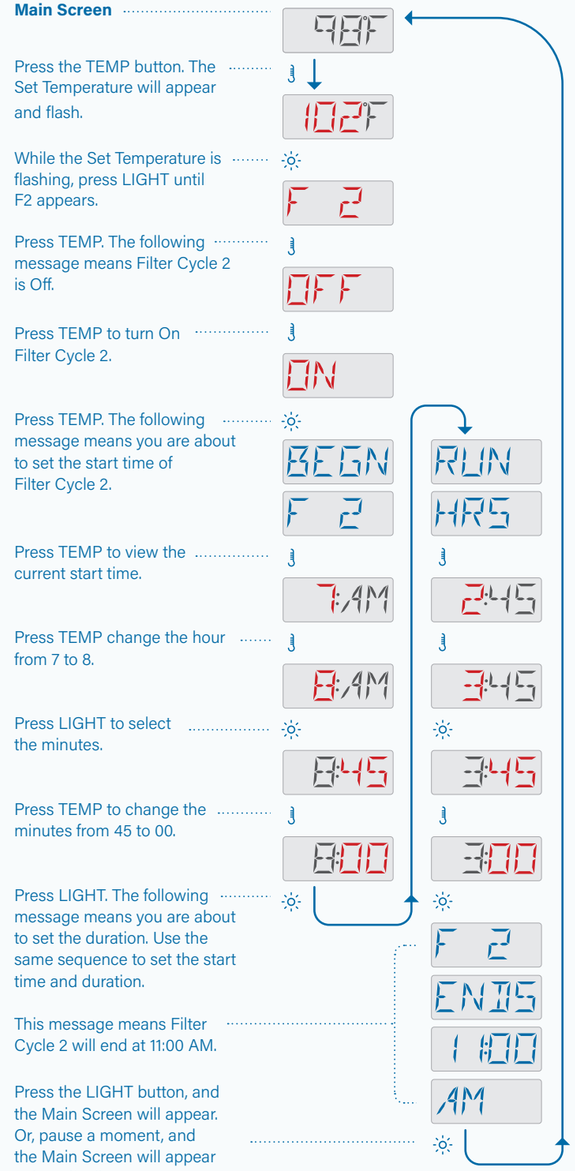
The heater pump (view page 18) runs for the whole duration of the filter cycle.

In order to maintain sanitary conditions, secondary Pumps and/or a Blower will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

If Filter Cycle 1 is set for 24 hours, enabling Filter Cycle 2 will initiate a purge when Filter Cycle 2 is programmed to begin.

On some systems, purge cycles may run several times a day, independent of the filter cycle.

SEQUENCE



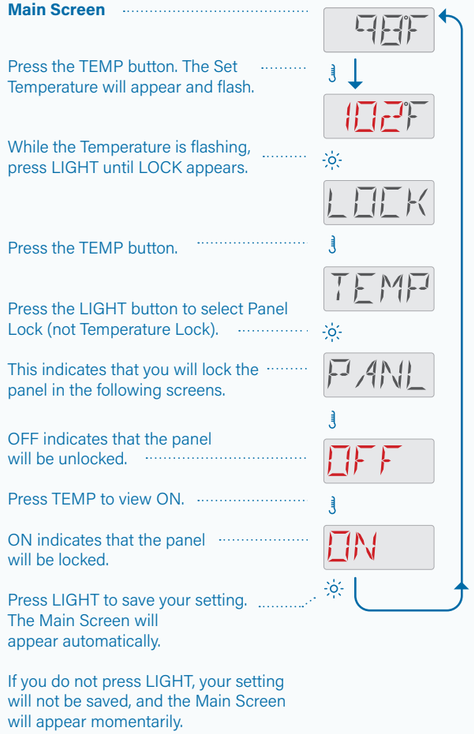
RESTRICTING OPERATION

The panel can be restricted to prevent unwanted use.

Lock Panel

Locking the panel prevents the panel from being used, but all automatic functions are still active. Follow this sequence to Lock the panel.

SEQUENCE



Unlock Panel

Follow this sequence to unlock the panel.

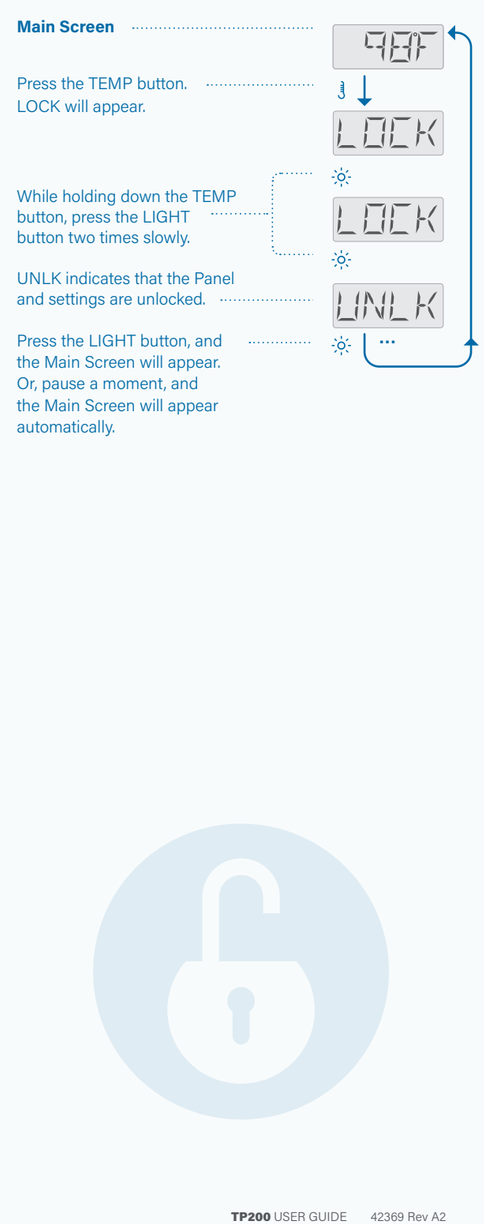
This unlock sequence may be used from any screen that may be displayed on a restricted panel.

*NOTE: If the panel has a **WARM** and a **COOL** temperature button (view page 3), only the **WARM** button will work in the Unlock Sequence.*

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- ○○○ Pause / back to Main Screen / setting not saved
- ●●● Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



RESTRICTING OPERATION (CONTINUED)

Lock Temperature & Settings

Follow this sequence to lock the temperature and settings.

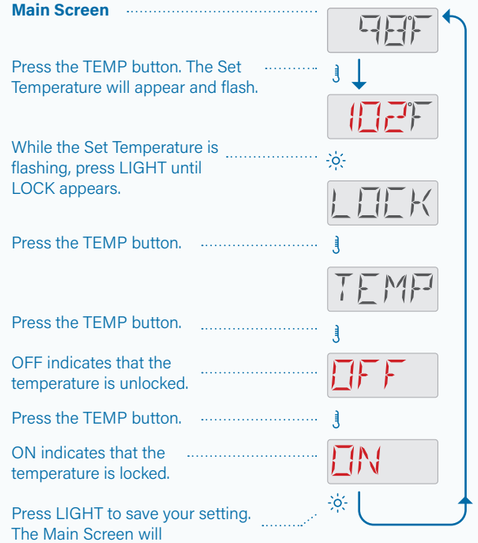
Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

Temperature Lock allows access to a reduced selection of menu items:

- View the Set Temperature
- FLIP
- LOCK
- UTIL
- INFO
- FAULT LOG

The next page illustrates how to Unlock the Temperature and Settings.

SEQUENCE



Unlock Temperature & Settings

Follow this sequence to unlock the temperature and settings.

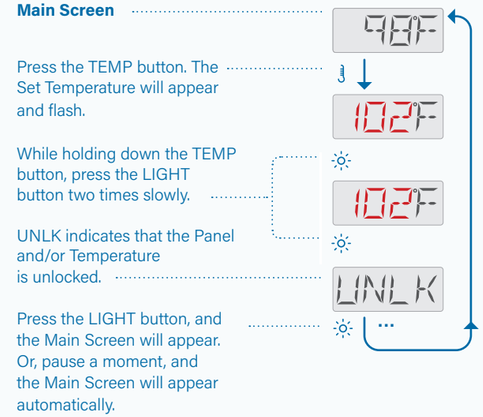
This unlock sequence may be used from any screen that may be displayed on a restricted panel.

*NOTE: If the panel has a **WARM** and a **COOL** temperature button (view page 3), only the **WARM** button will work in the Unlock Sequence.*

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- ○○○ Pause / back to Main Screen / setting not saved
- ●●● Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



INVERT DISPLAY

Follow this sequence to invert the display.

This display is inverted (A), and this display is not inverted (B).

SEQUENCE

Main Screen

Press the TEMP button. The Set Temperature will appear and flash.

While the Set Temperature is flashing, press LIGHT until FLIP appears.

Press TEMP to flip the display.

Press LIGHT to save your setting. The Main Screen will appear automatically.

If you do not press LIGHT, your setting will not be saved, and the Main Screen will appear momentarily.

Follow the same sequence to restore the default display orientation (B).

HOLD MODE

HOLD MODE

Follow this sequence activate Hold Mode.

Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. This mode will last for 1 hour unless it is exited manually by pressing the LIGHT button.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE

Main Screen

Press the TEMP button. The Set Temperature will appear and flash.

Press the LIGHT button until HOLD appears.

Press the TEMP button to put the pumps on Hold for one hour.

This message indicates that the pumps are on Hold for one hour, and this message will appear during the whole hour.

You can exit Hold Mode at any time by pressing the LIGHT button.

This indicates that the Hold Mode is done. After a moment the Main Screen will appear automatically.

HOLD MODE + DRAIN MODE

DRAIN MODE

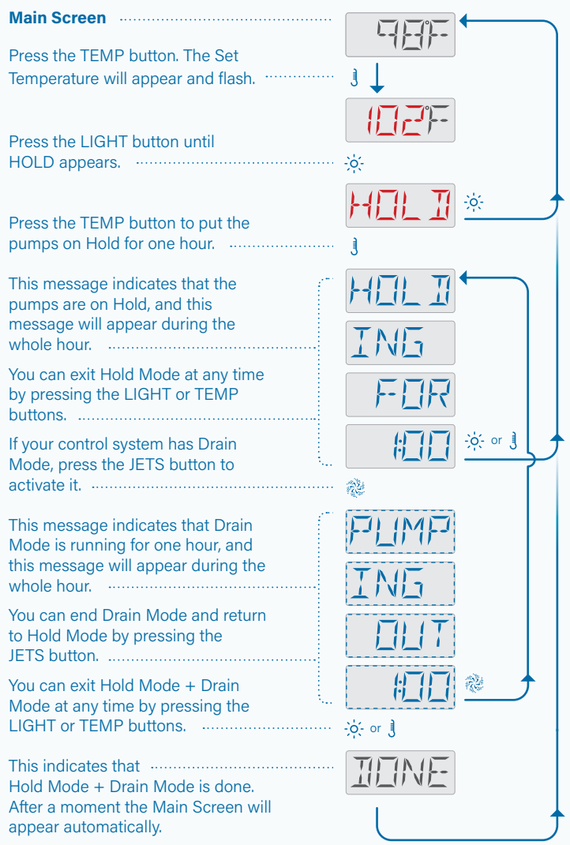
Some control systems have Drain Mode, which is a component of Hold Mode. Drain Mode allows a pump to be employed when draining the water.

Follow this sequence to use Hold Mode + Drain Mode.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



LIGHT TIMER PROGRAMMING

Light Timer Option

If LITE TIMR does not appear in the Main Menu, the Light Timer feature is not enabled by the manufacturer of your spa.

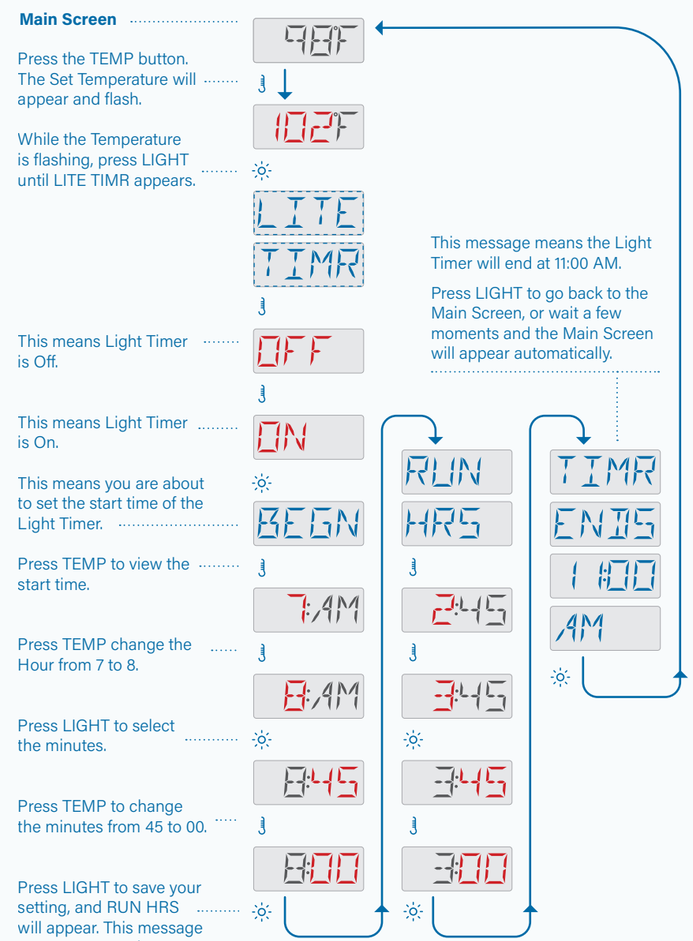
In this example, we will do the following:

- Turn On the Light Timer
- Set the start time to 8:00 AM
- Set the duration to 3 hours

This means the Light Timer will end at 11:00 AM. Follow the same sequence to set the Light Timer on your spa.

When available, the Light Timer is OFF by default.

SEQUENCE



SPA BEHAVIOR

FILTRATION AND OZONE

If your spa does not have a circulation pump, pump 1 low and the ozone generator will run during a filter cycle. If your spa has a circulation pump, the ozone will run with the circulation pump.

Many control systems are factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter cycle time and duration are programmable (view page 7). A second filter cycle can be enabled as needed.

On most systems at the start of each filter cycle, the blower (if there is one) or Pump 2 (if there is one) will run briefly to purge its plumbing to maintain good water quality.

On some systems, purge cycles may run several times a day, independent of the filter cycle.

FREEZE PROTECTION

If the temperature sensors within the control system's heater detect a low enough temperature, then the pump(s) and the blower automatically activate to provide freeze protection. The pump(s) and blower will run either continuously or periodically depending on conditions.

In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

CLEAN-UP CYCLE *(Optional)*

When a pump or blower is turned on by pressing a button on the panel, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for 30 minutes or more, depending on the control system. On some control systems, you can change this setting (view page 45).

PUMPS

Press the **JETS** button once to turn Pump 1 On or Off, and to shift between low-speed and high-speed if equipped. If left running, Pump 1 will turn off after a time-out period.

The heater pump will run when the blower or any other pump is on.

If the spa is in Ready Mode (view page 20), Pump 1 low may also activate for at least 1 minute every once in a while to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

3 CIRCULATION PUMP MODES

If the spa is equipped with a circulation pump, it will be configured to work in one of the following three modes:

MODE 1: The circulation pump will operate continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).

MODE 2: The circulation pump will stay on continuously, regardless of the water temperature.

MODE 3: A programmable circulation pump will come on when the control system is checking the water temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

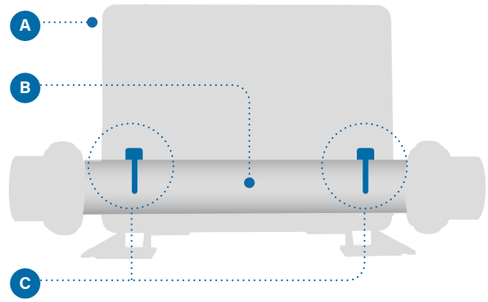
Circulation pump modes are determined by the Manufacturer and cannot be changed in the field.

HOW DOES YOUR CONTROL SYSTEM CHECK THE WATER TEMPERATURE?

The control system (A) activates a pump that circulates water from the spa through the water heater (B) shown below. The water heater contains two temperature sensors (C). When water flows around the sensors, the control system calculates the water temperature. This process is referred to as "polling" in this user guide.

HEATER PUMP

The heater pump is any pump dedicated to circulating water through the water heater. If your spa has a circulation pump, the circulation pump will serve as the heater pump. If your spa does not have a circulation pump, a two-speed pump will serve as the heater pump. If the heater pump is a two-speed pump, anytime it is activated automatically (for any reason, including to check the water temperature), it will activate at low speed.



HEAT SETTINGS

Keep your spa heated and ready to enjoy, or keep it cool and save energy. Heat Settings help you do both.

Heat Settings are divided into two groups.

- 1 - Heat Modes
- 2 - Temperature Ranges

HEAT MODES

There are three Heat Modes

1 - READY MODE

Ready Mode usually keeps the water temperature close to the Set Temperature 24 hours a day. If you use your spa consistently, you probably want to use Ready Mode.

2 - REST MODE

Rest Mode only heats the water during filter cycles. If you do not use your spa for an extended period of time, you may want to use Rest Mode.

3 - READY-IN-REST MODE

This mode is a subfeature of Rest Mode. When your spa is in Rest Mode, and you press the JETS button, Rest Mode will automatically switch to Ready-In-Rest Mode for one hour. During this hour the control system will attempt to keep the water temperature close to the Set Temperature.

TEMP RANGES

HIGH RANGE

80° - 104° F

26.6° - 40.0 C

LOW RANGE

50° - 99° F

10.0° - 37.2 C

Different High and Low Temperature Ranges may be determined by the Manufacturer. Freeze Protection is active in High and Low ranges.

HEAT SETTINGS

HEAT MODES

Follow this sequence to view the current Heat Mode and/or change the Heat Mode. There are two Heat Modes you can select from the panel menu:

1 - Ready Mode (RDY)
2 - Rest Mode (REST)

Ready-In-Rest Mode (RRST) is a third Heat Mode. But, it is a subfeature of Rest Mode and is not selectable from the panel menu. However, when you follow the sequence to view the current Heat Mode, any of the three Heat Modes can be displayed as the current Heat Mode.

SEQUENCE

Main Screen

Press the TEMP button. The Set Temperature will appear and flash.

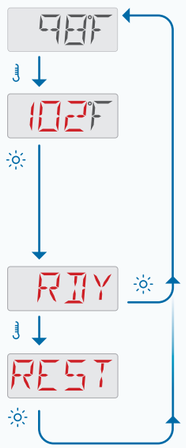
While the Set Temperature is flashing, press LIGHT until one of the following Heat Modes appears: RDY, REST, RRST. The first one to appear is the current Heat Mode setting.

In this example RDY appears first, which means the current Heat Mode is set to READY. If you wait for a moment, the Main Screen will appear automatically, and the Heat Mode setting will remain READY.

If you want to change the Heat Mode to REST, press the TEMP button.

REST indicates that the Heat Mode will be set to REST.

Press LIGHT to save your setting. The Main Screen will appear automatically. If you do not press LIGHT, your setting will not be saved, and the Main Screen will appear momentarily.



NOTES

REST MODE

When the spa is in REST Mode (REST), the Main Screen will alternate between displaying the water temperature and REST.

READY-IN-REST MODE

If you press the JETS button while in Rest Mode, the spa will switch to Ready-In-Rest Mode (RRST) for one hour. The Main Screen will alternate between displaying the water temperature and RRST.

HEAT SETTINGS

TEMPERATURE RANGES

Follow this sequence to view the current Temperature Range and/or change the Temperature Range. There are two ranges to choose from:

1 - High Range (TR:HI)
2 - Low Range (TR:LO)

SEQUENCE

Main Screen

Press the TEMP button. The Set Temperature will appear and flash.

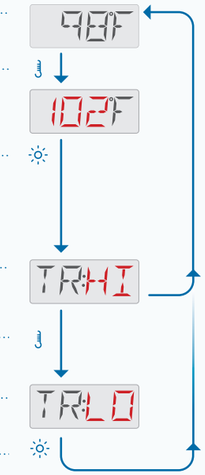
While the Set Temperature is flashing, press LIGHT until one of the following settings appears: TR:HI or TR:LO. The first one to appear is the current Temperature Range setting.

In this example TR:HI appears first. TR:HI indicates that the current Temperature Range setting is HIGH. If you wait for a moment, the Main Screen will appear automatically, and the Temperature Range setting will remain HIGH.

If you want to change the Temperature Range to LOW, press the TEMP button.

This indicates that your Temperature Range will be set to LOW.

Press LIGHT to save your setting. The Main Screen will appear automatically. If you do not press LIGHT, your setting will not be saved, and the Main Screen will appear momentarily.



SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

FILL IT UP!

PREPARATION AND FILLING

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing during the filling process. Air may be trapped in the plumbing after filling the spa. Remove trapped air by priming the pumps. Priming will be discussed shortly.

After powering On the spa at the main power panel, the spa panel display (view right) will go through a specific sequence. This sequence is normal and will display a variety of information regarding the configuration of the control system. After the sequence ends, the control system will start Priming Mode.

Spa Panel Display

PRIMING MODE

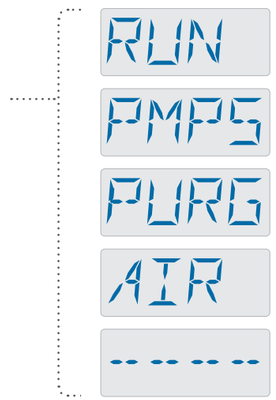
Priming Mode will last for 4-5 minutes, or you can manually exit Priming Mode after the pump(s) have primed.

Regardless of whether Priming Mode ends automatically or you manually exit Priming Mode, the control system automatically returns to normal heating and filtering at the end of Priming Mode. During Priming Mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-water-flow or no-water-flow conditions. Nothing comes on automatically, but the pump(s) can be energized manually with the panel buttons.

PRIMING THE PUMPS

This panel message (view right) indicates that the spa is in Priming Mode. Priming Mode lasts 4-5 minutes. Note: Turning the power Off and back On again will initiate a new pump priming session. If you need more than 4-5 minutes to prime all of the pumps, cycle power to the spa.

Priming Mode Panel Message



What is priming?

Priming removes trapped air from the plumbing. How do you know when a pump is done priming? Priming is complete when water flows from the jets without air bubbles. So, watch the jets as you prime the pump. If your spa has more than one pump, prime each pump one at a time. Why prime one at a time? If multiple pumps are running, it is too difficult to determine which pump is circulating air bubbles, or the flow from one pump may hide the flow from another pump.

Follow these steps to prime a two-speed pump:

Press the button for that pump once to turn it On at low speed. Press the button again to run the pump at high speed. Run the pump at high speed for 2 minutes. If priming is not complete after 2 minutes, turn off the pump and repeat the process.

Follow these steps to prime any one-speed pump, including a circulation pump:

Press the button for that pump once to turn it On. Run the pump for 2 minutes. If priming is not complete after 2 minutes, turn off the pump and repeat the process.

Sometimes momentarily turning the pump Off and On will help it to prime. Do not do this more than 5 times. If the pump will not prime, shut off the power to the spa and call for service.

Which pump is the heater pump?

When the spa has just entered Priming Mode, press the LIGHT button and see if any water flows. If so, you have a circulation pump serving as the heater pump. If not, a two-speed pump serves as the heater pump. A circulation pump is controlled with the LIGHT button (in Priming Mode only). A two-speed heater pump is controlled by pressing the JETS button.

The heater pump is the most important pump to prime.

Once the heater pump is primed, prime any additional pumps. The AUX button may control one of these pumps.

IMPORTANT: A pump should not be allowed to run without priming for more than 2 minutes. Under NO circumstances should a pump be allowed to run without priming beyond the end of the 4-5 minute Priming Mode. Doing so may cause damage to the pump and in some cases may cause the system to energize the heater and go into an overheat condition.

EXITING PRIMING MODE

Priming Mode ends automatically after for 4-5 minutes. However, you can manually exit Priming Mode during this time by pressing the TEMP button.

When Priming Mode ends (automatically or manually) the panel will display dashes. Once the control system cycles water through the heater for one minute, the dashes will be replaced by the water temperature.

PANEL MESSAGES

Helpful information to help keep your spa running smoothly

This chapter lists all of the Panel Messages and explains each one. Some Panel Messages have corresponding Message Codes. If so, the Message Code (B) appears next to the Panel Message (A).

MESSAGE CODES

The easiest way to explain a Message Codes is with a troubleshooting scenario. For example, what happens if the spa water overheats? The panel will display this message (A). The control system will capture the following information and save it in a fault log:

- Time-Of-Day.
- Water temperature, Set Temperature.
- The number of days that have passed since the water overheated.
- Temperature Range.
- Heat Mode.
- Message Code (B).

The Message Code links the Panel Message to the corresponding Fault Log information. For example, this Message Code (B) will appear in the corresponding Fault Log. See how to review the Fault Log on page 55.

PANEL MESSAGES

GENERAL

Message Code *

This message indicates that the spa is in Priming Mode.

Each time the spa is powered up, it will enter Priming Mode. The purpose of Priming Mode is to allow the user to run each pump and manually verify that the pumps are primed (air is purged) and water is flowing. This typically requires observing the output of each pump separately, and is generally not possible in normal operation. Priming Mode lasts 4 minutes, but you can exit it earlier by pressing any Temp button. The heater is not allowed to run during Priming Mode.

NOTE: If your spa has a circulation pump, you can turn it On by pressing the LIGHT button during Priming Mode. The circulation pump will run by itself when Priming Mode is exited.

The water temperature is unknown or out of date.

After the pump has been running for 1 minute, the temperature will be displayed.

This display may also appear if the pump has not run for more than one hour while the spa is in Ready Mode.

The water is too cold - freeze protection.

A potential freeze condition has been detected, or the Aux Freeze Switch has closed, so all pumps and blowers are activated. All pumps and blowers are ON for at least 4 minutes after the potential freeze condition has ended, or when the auxiliary freeze switch opens.

In some cases, pumps may turn On and Off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.

---

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
* * This message can be reset from the panel with any button press.

Message Code *

The spa water is too hot.

One of the water temperature sensors has detected a spa water temperature of 110°F (43.3°C), so spa functions are disabled. The Control System will automatically reset when the spa water temperature is below 108°F (42.2°C). Extended pump operation or high ambient air temperatures can cause overheating.

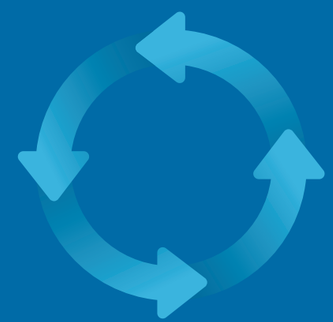
Message Code *

J29 Warning.

J29 is a connector in the control system. J29 is typically used as a heater disable input. As such, it should not typically be shorted at power-up. This message appears if J29 is shorted at power-up. If this message appears after several power-ups, contact your dealer or service organization.

Water Flow Check List

- Make sure the spa is filled with enough water to allow proper water flow through all of the spa's plumbing.
- Closed valves can inhibit proper water flow.
- Jets may be equipped with water valves. If too many water valves are closed, proper water flow may be inhibited.
- Make sure suction covers are unobstructed and free of debris.
- One pump cycles water through the heater. All plumbing connected to this pump and the heater must be free from trapped air. Trapped air can restrict proper water flow. Remove trapped air by priming this pump.



PANEL MESSAGES

HEATER RELATED

Control System

HTR FLOW LOSS ------ | MD 16 Message Code *

Low water flow through the heater. **

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Water Flow Check List” on page 28.

HTR FLOW FAIL ------ | MD 17 Message Code *

Inadequate water flow through the heater. **

There is not enough water flow through the heater to carry the heat away from the heating element, so the heater has been disabled. See “Water Flow Check List” on page 28. After the problem has been resolved, you must press any button on the panel to reset the control system and begin heater start up.

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

HTR MAY BE DRY ------ WAIT ------ | MD28 Message Code *

The heater may be dry. **

Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 minutes. Press any button to reset the heater start-up. See “Water Flow Check List” on page 28.

HTR DRY ------ | MD27 Message Code *

Heater is dry. **

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must press any button to reset and restart heater start up. See “Water Flow Check List” on page 28.

HTR TOO HOT ------ | MD30 Message Code *

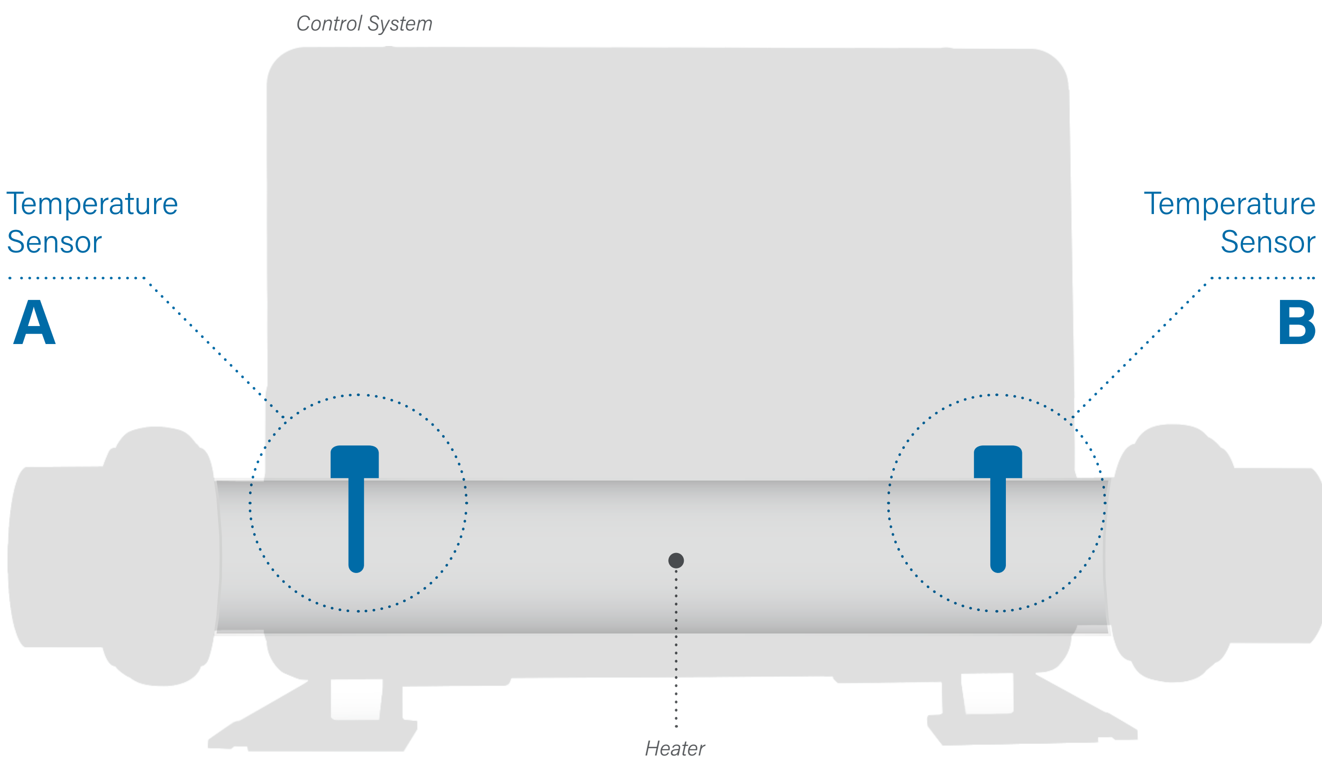
The heater is too hot. **

One of the water temp sensors has detected 118°F (47.8°C) in the heater and the spa is shut down. You must press any button to reset when water is below 108°F (42.2°C). See “Water Flow Check List” on page 28.

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

PANEL MESSAGES

TEMPERATURE SENSOR RELATED



102F SNSR BAL-- ANCE | M015 Message Code *

The temperature sensor balance is poor.

The temperature sensors may be out of sync.

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

SNSR SYNC ------ CALL FOR SRVC ------ | M028 Message Code *

The temperature sensor balance is poor. **

The temperature sensors are out of sync. If this message appears in the panel display, this fault has been established for at least 1 hour. Contact your dealer or service organization.

SNSR A ------ CALL FOR SRVC ------ | M031 Message Code *

Temperature sensor “A” has failed.

Either temperature sensor “A” or the sensor circuit has failed. Contact your dealer or service organization.

SNSR B ------ CALL FOR SRVC ------ | M032 Message Code *

Temperature sensor “B” has failed.

Either temperature sensor “B” or the sensor circuit has failed. Contact your dealer or service organization.

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

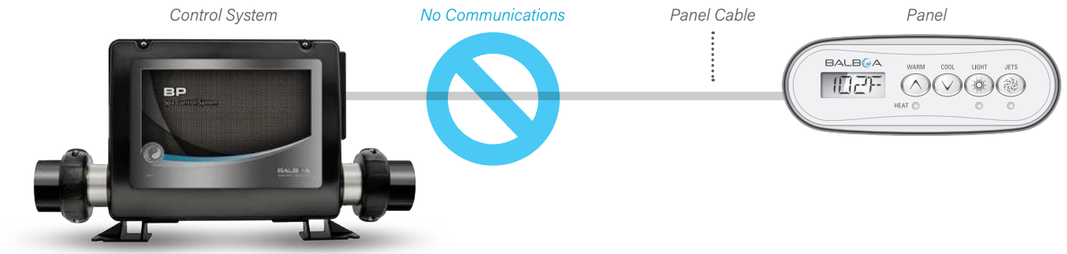
PANEL MESSAGES

MISCELLANEOUS

NO COMM

No Communications.

The panel is not receiving communication from the control system. Contact your dealer or service organization.



102°T

°F or °C is replaced by °T.

The Control System is in Test Mode. Contact your dealer or service organization.

PANEL MESSAGES

CONTROL SYSTEM RELATED

MEM FAIL ----- | M022 Message Code *

Memory Failure - Checksum Error. **

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program). Contact your dealer or service organization.

MEM RSET ----- | M021 Message Code *

Memory Warning - Persistent Memory Reset. **

Appears after any system setup change. Contact your dealer or service organization if this message appears on more than one power-up, or if it appears after the system has been running normally for a period of time.

CLOC FAIL ----- | M020 Message Code *

Clock Error. **

The clock that keeps track of time when the spa is powered Off has failed. Contact your dealer or service organization.
Note: Not Applicable on some control systems.

CNFG FAIL ----- CALL FOR SRVC ------

Configuration Error – Spa will not Start Up.

Contact your dealer or service organization.

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

Message Code *

GFCI Failure - System Could Not Test/Trip the GFCI.

NORTH AMERICA ONLY. May indicate an unsafe installation.
Contact your dealer or service organization.

Message Code *

A Pump Appears to be Stuck ON.

Water may be overheated.
POWER DOWN THE SPA. DO NOT ENTER THE WATER.
Contact your dealer or service organization.

Message Code *

A Pump Appears to have been Stuck ON when spa was last powered.

POWER DOWN THE SPA. DO NOT ENTER THE WATER.
Contact your dealer or service organization.

The water level is too low.

Some systems have a water level detector, and this message appears if it detects that the water level is too low. Pumps are shut down until this problem clears.

---

* View page 55 for instructions on how to review the Fault Log that corresponds with the Message Code.
** This message can be reset from the panel with any button press.

PANEL MESSAGES

REMINDER

General maintenance helps your spa.

Reminder messages alternate with the Main Screen.

Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of Reminders on a specific model.

The frequency of each Reminder (i.e. 7 days) can be specified by the Manufacturer.

Press a Temperature button to reset a displayed Reminder Message.

The display of Reminder Messages can be turned On/Off (view page 43).

Main Screen

Check pH

This message may appear every 7 days. Check the pH of your spa's water with a pH test kit, and adjust pH with the appropriate chemicals.

Check the sanitizer chemicals

This message may appear every 7 days. Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.

Clean the water filter.

This message may appear every 30 days. Clean the filter media as instructed by the manufacturer. See Hold Mode on page 14.

Test the GFCI or RCD.

This message may appear every 30 days. The Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) is an important safety device and must be tested on a regular basis to verify its reliability.

Every user should be trained to safely test the GFCI or RCD associated with the hot tub installation.

A GFCI or RCD will have a TEST and RESET button on it that allows a user to verify proper function.

Warning:

If freezing conditions exist, a GFCI or RCD should be reset immediately or spa damage could result. If the GFCI or RCD does not reset and freezing conditions exist, drain the spa of all water until the spa is functional again.

The end user should always trained to test and reset the GFCI or RCD on a regular basis.

Change the spa water.

This message may appear every 90 days. Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.

Clean the spa cover.

This message may appear every 180 days. Vinyl covers should be cleaned and conditioned for maximum life.

Treat the wood.

This message may appear every 180 days. Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.

Change the water filter.

This message may appear every 360 days. Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.

Change the mineral cartridge as needed.

Install a new mineral cartridge per you spa manufacturer's instructions.

Check the ozone and/or UV generator.

This message may appear every 360 days. Check your ozone and/or UV generator per your spa manufacturer's instructions.

Your spa needs a service check.

This message may appear every 365 days. Contact your service organization for a service check.

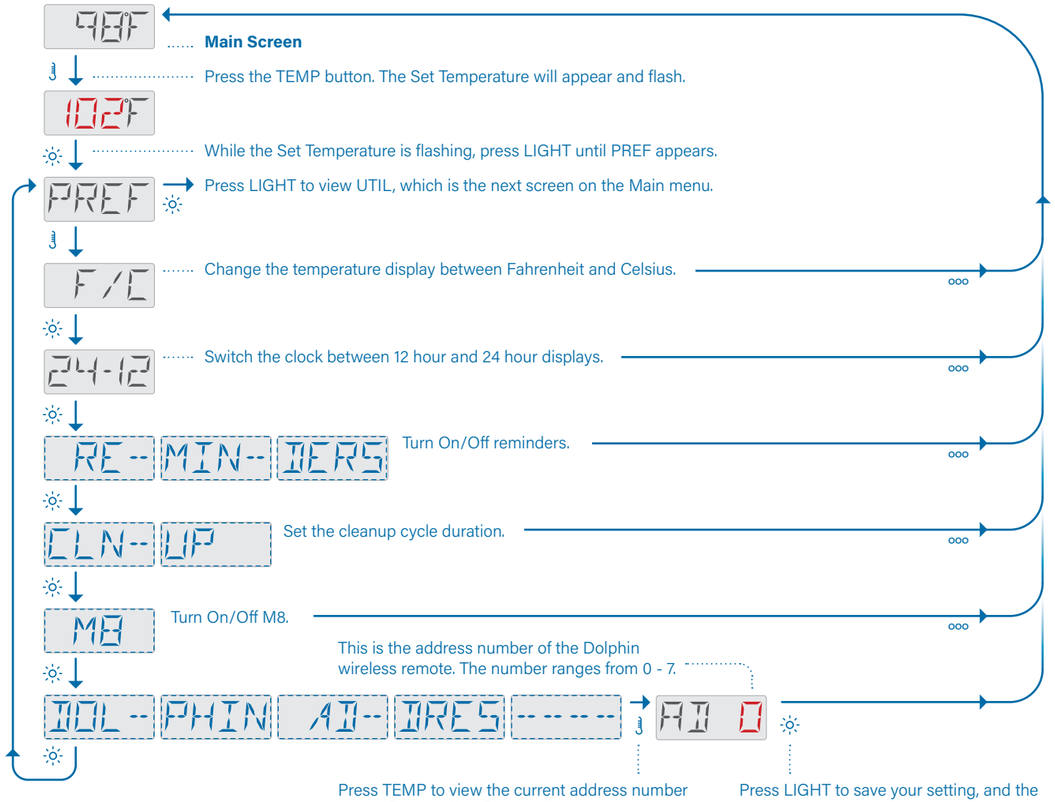
PREFERENCES

Fine-tune your spa’s settings

PREFERENCES

PREFERENCES MENU

This is the Preferences menu structure.



PREFERENCES

DISPLAY °F OR °C

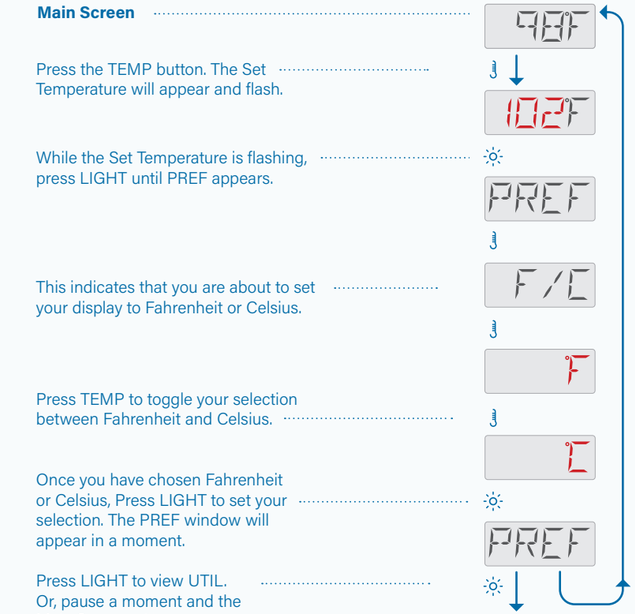
Follow this sequence to set your panel to display Fahrenheit or Celsius.

Most North American control systems default to °F. CE control systems default to °C.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- ○○○ Pause / back to Main Screen / setting not saved
- ●●● Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



PREFERENCES

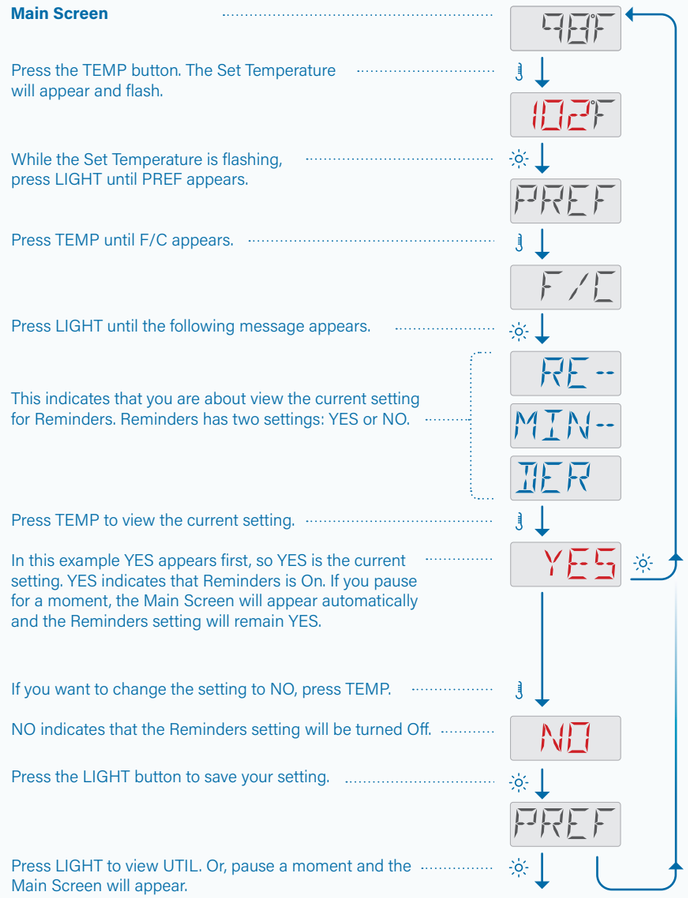
TURN ON/OFF REMINDERS DISPLAY

The Reminders Display feature has two settings: YES, NO. YES means the feature is On and Reminders will be displayed. NO means the feature is Off and Reminders will not be displayed.

Note: Reminders continue to run in the background even when not displayed. So, turning the display of Reminders On/Off does not reset any Reminder counts.

Follow this sequence to view the current setting and to turn this feature On or Off.

SEQUENCE



PREFERENCES

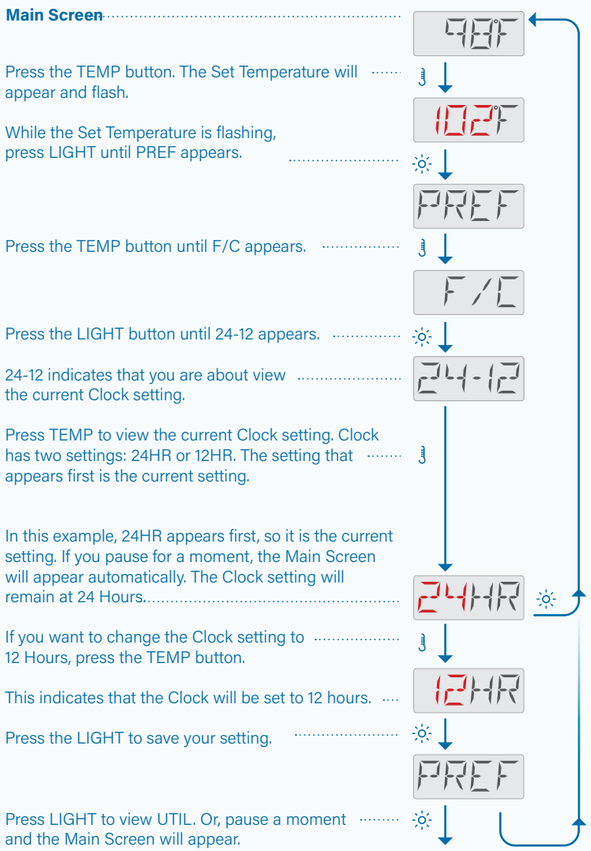
SET 12 OR 24 HOUR CLOCK

The Clock feature has two settings: 12 hours or 24 hours. Follow this sequence to view the current Clock setting and to change the setting.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



PREFERENCES

SET CLEANUP CYCLE DURATION

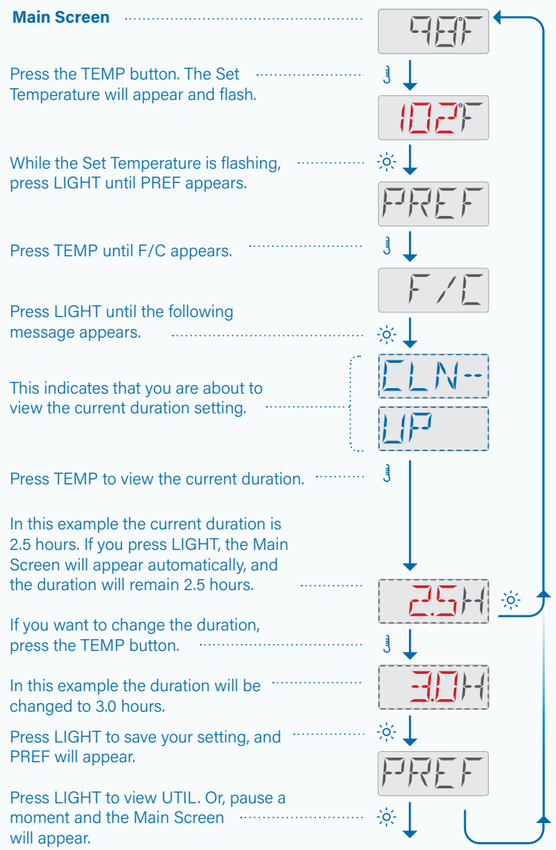
Follow this sequence to view the current Cleanup Cycle duration or change the duration.

The duration can be set from 0 - 4 hours in 30 minute increments.

The heater pump will run during a Cleanup Cycle. View page 18 for more information on the heater pump.

Cleanup Cycle is not available on all control systems.

SEQUENCE



PREFERENCES

TURN ON/OFF M8

Follow this sequence to view the current M8 setting and to change the setting.

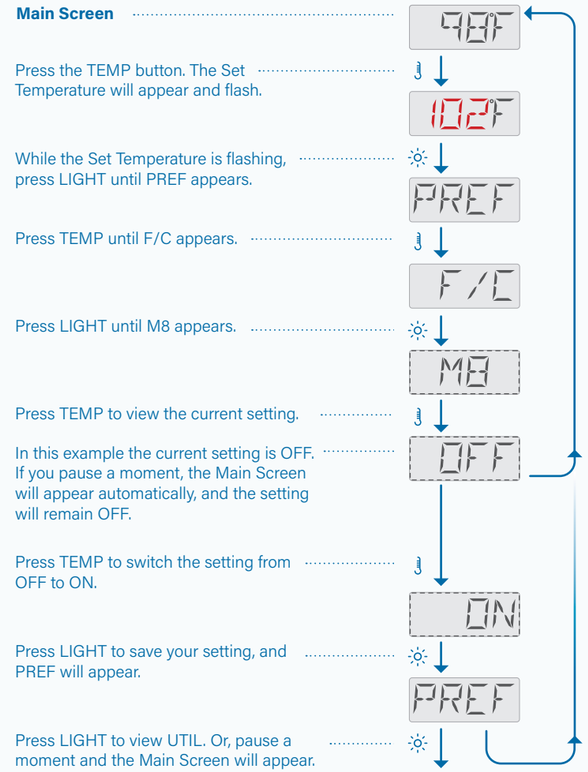
M8 is artificial intelligence software contained in your spa's control system. M8 looks for opportunities to decrease device usage by evaluating water temperature readings. Stable water temperatures equal less device usage and less wear and tear.

M8 is not available on all control systems.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for "action"
- Press LIGHT button to "select"
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



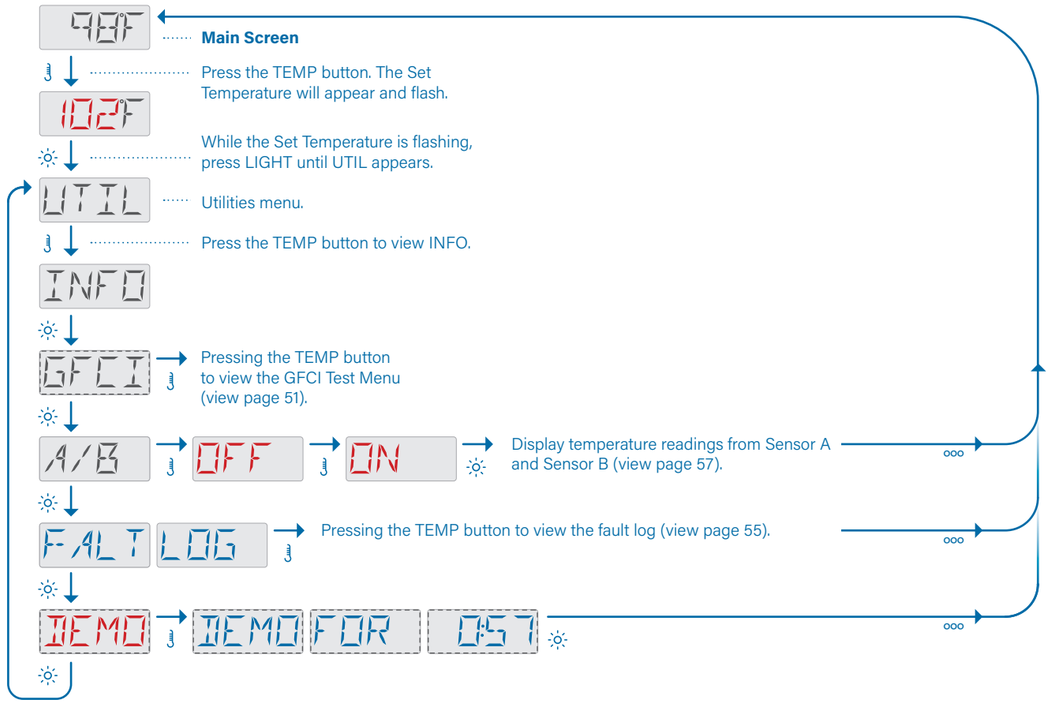
UTILITIES

Helpful tools and information
for spa technicians

UTILITIES

UTILITIES MENU

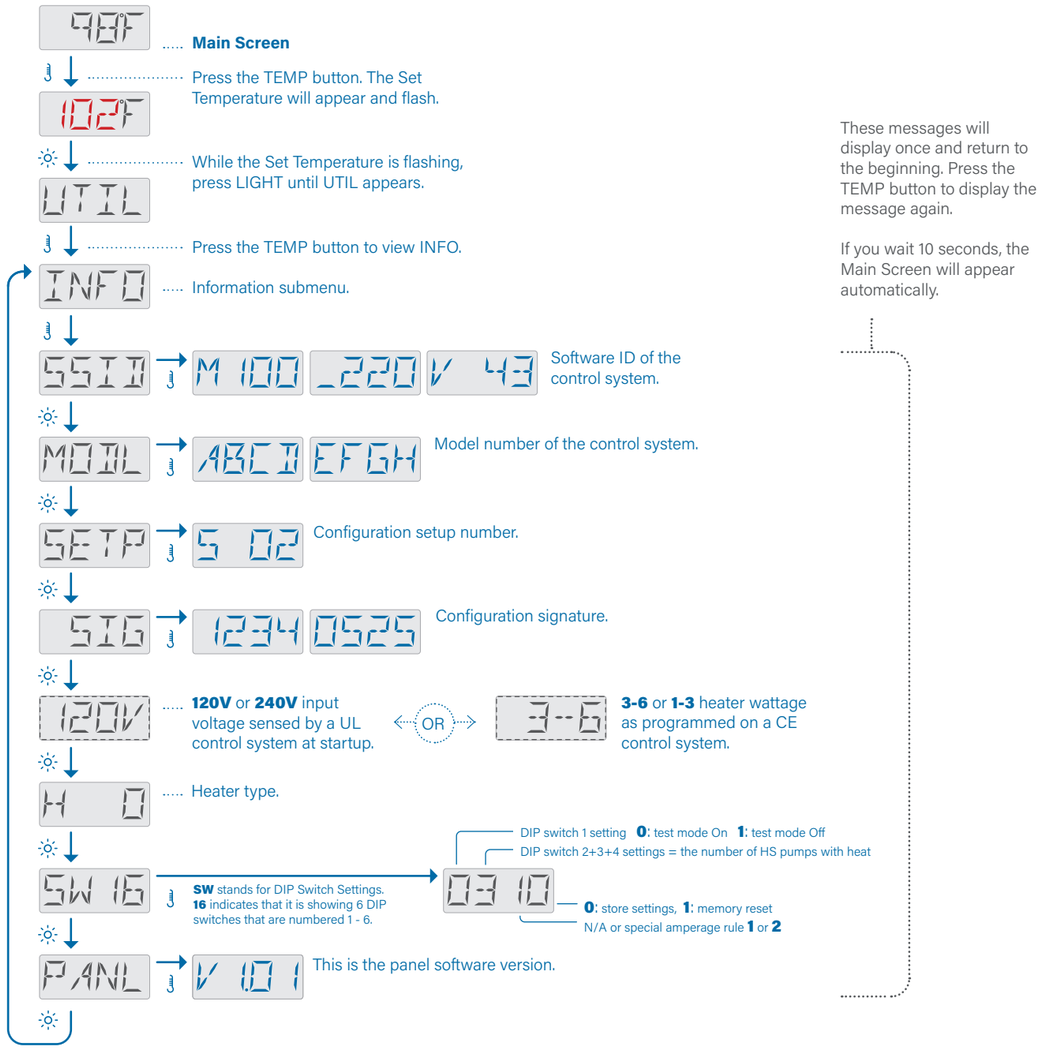
This is the Utilities menu.



UTILITIES

INFORMATION SUBMENU

This is the INFO submenu on the Utilities menu.



UTILITIES

GFCI TEST FEATURE

The GFCI test feature is not available on CE rated control systems.

A GFCI is an important safety device and is required equipment on a hot tub installation.

Your spa may be equipped with a GFCI Protection feature. (UL rated systems only.) If your spa has this feature enabled by the manufacturer, the GFCI Trip Test must occur to allow proper spa function.

Within 1 to 7 days after startup, the spa may trip the GFCI to test it. (The number of days is factory programmed.) The GFCI must be reset once it has tripped. After passing the GFCI Trip Test, any subsequent GFCI trips will indicate a ground fault or other unsafe condition and the power to the spa must be shut off until a service person can correct the problem.

Not all control systems trip the GFCI automatically after a certain number of days. If the control system does not trip the GFCI automatically, the GFCI must be tripped manually.

Forcing the GFCI Trip Test

The installer or spa owner can cause the GFCI Trip Test to occur at any time by following the sequence on the next page.

The GFCI should trip within a few seconds and the spa power should shut down. If the GFCI does not trip (see next page), shut down the power to the spa.

The installer or service technician should:

- Manually verify that a GFCI breaker is installed and that the circuit and spa are wired correctly.
- Verify the function of the GFCI with its own test button.
- Restore power to the spa and repeat the GFCI Trip Test.

Once the GFCI is tripped by the test, reset the GFCI and the spa will operate normally from that point. You can verify a successful test by following the sequence on page 54. PASS should appear after a temp button is pressed from the GFCI screen.

The end user should always be trained to test and reset the GFCI on a regular basis.

WARNING:

If freezing conditions exist, a GFCI should be reset immediately or spa damage could result. If the GFCI does not reset and freezing conditions exist, drain the spa of all water until the spa is functional again.

Follow this sequence to perform a GFCI test.

If the test is successful, the spa will power Off.

If the test is unsuccessful, the spa needs to be powered Off, and a spa technician needs to fix the electrical problem.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE - TEST THE GFCI

Main Screen — 98F

Press the TEMP button. The Set Temperature will appear and flash. — 102F

While the Set Temperature is flashing, press LIGHT until UTIL appears. — UTIL

INFO

This indicates that you are entering GFCI Test Mode. (*This feature is not available on CE rated systems.*) — GFCI

This screen will display either ARMD or PASS. — ARMD

TRIP

Press TEMP and TRIP will begin flashing. — TRIP

Press TEMP to perform the test.

UNSUCCESSFUL TEST

This indicates that the test has failed. When this message appears, the spa will be inoperable, and the spa should be powered Off. A spa technician needs to fix the electrical problem.

GFCI
FAIL
-- -- -- --

SUCCESSFUL TEST

The spa will power Off if the GFCI test is successful. Power On the spa at the GFCI.

UTILITIES

GFCI TEST FEATURE (CONTINUED)

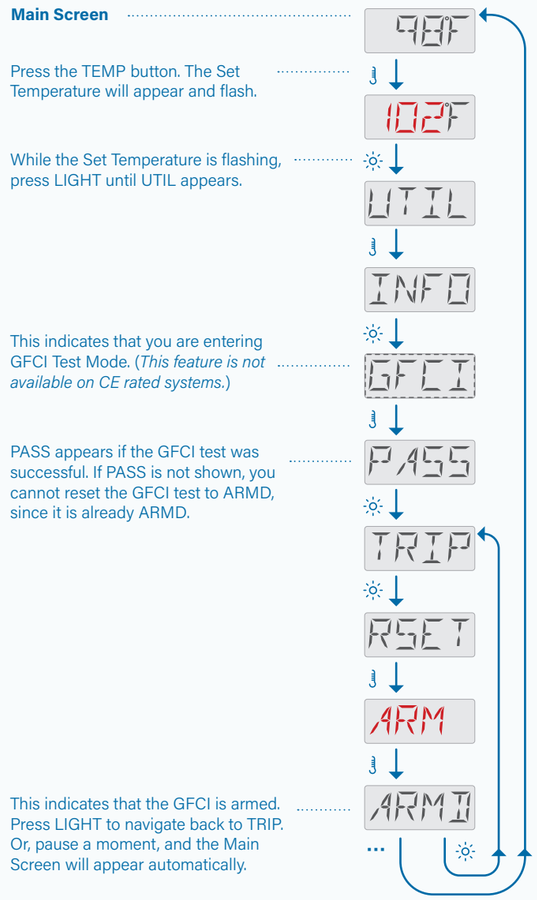
Follow this sequence to reset the GFCI test feature and bring it back to its armed state within the control system.

You may want to reset the GFCI test feature if the spa is about to be moved to a new location, so that it will need to be re-tested after installation at the new location.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE - RESET GFCI TEST



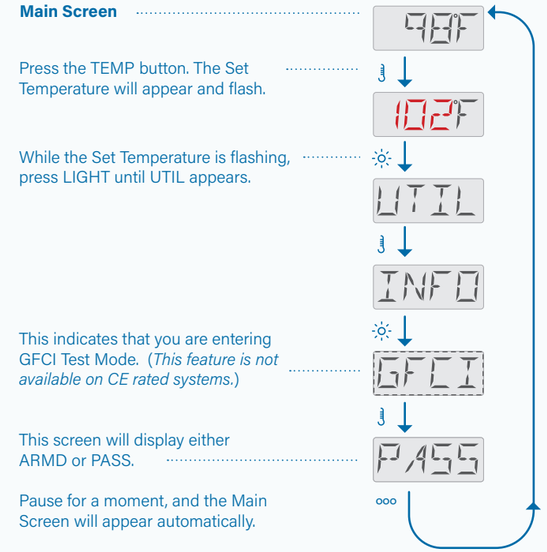
Follow this sequence to check the current status of the GFCI test feature.

The current status is either PASS or ARMD.

If the last screen of this sequence displays PASS, the most recent GFCI test was performed and passed successfully.

If the last screen of this sequence displays ARMD, either no GFCI test has been performed yet, or the most recent GFCI test was unsuccessful.

SEQUENCE - GFCI TEST STATUS



UTILITIES

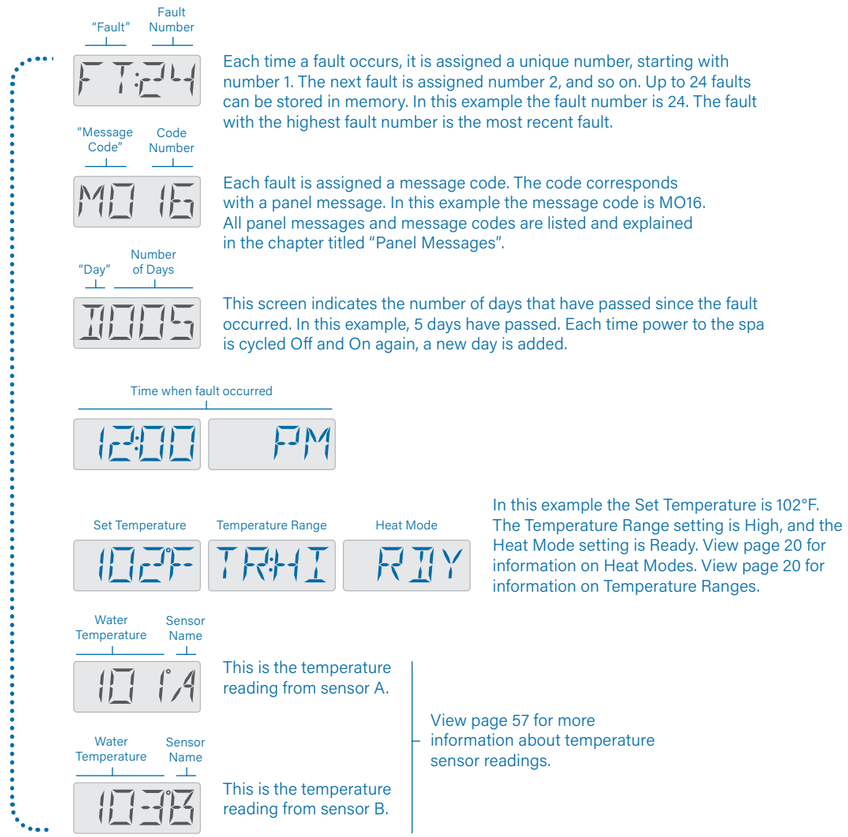
FAULT LOG

A Little History can help a lot.

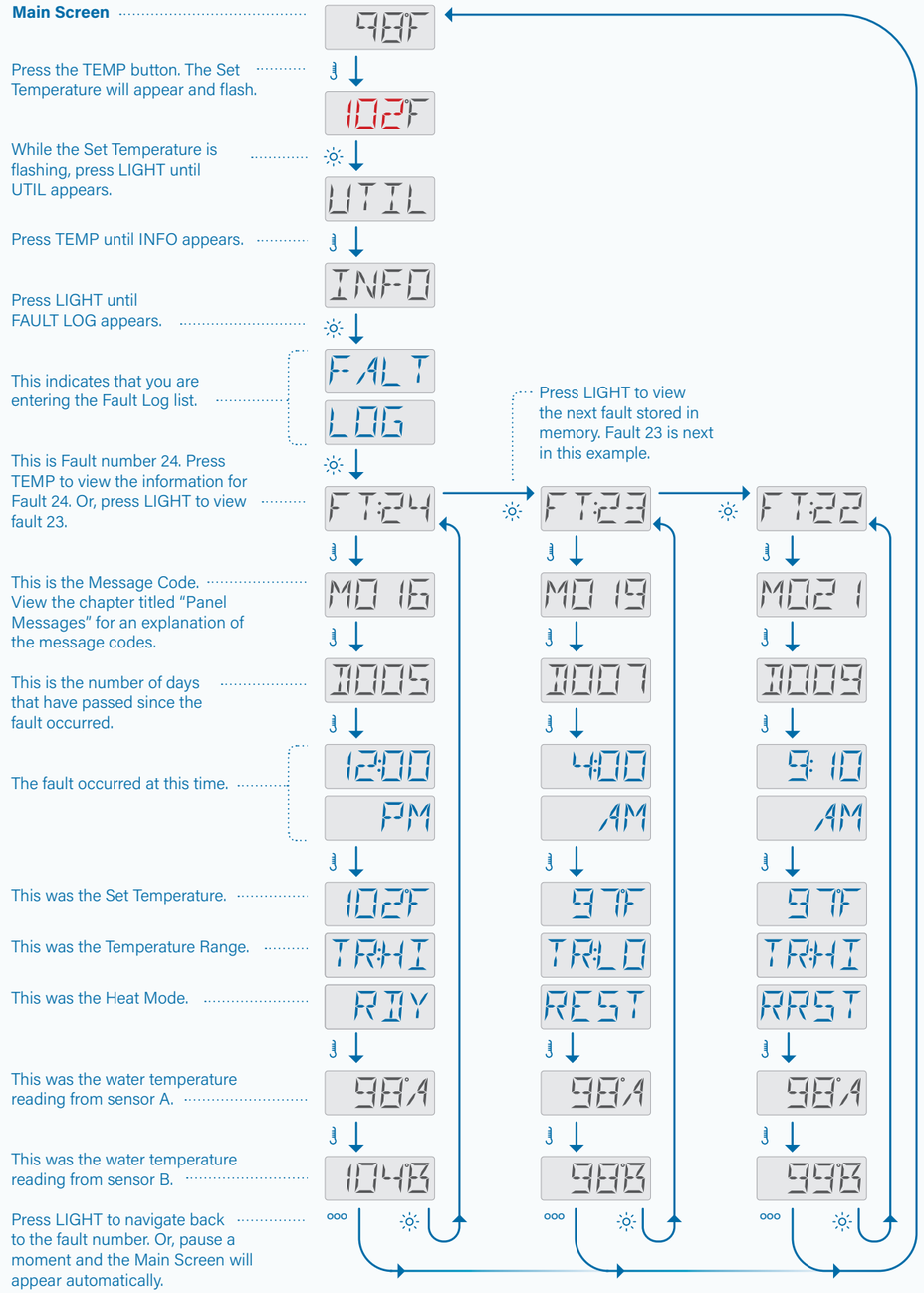
Useful information about your spa is captured when a fault occurs. The information is stored in a Fault Log. Up to 24 faults can be stored in the Fault Log. The diagram below shows the information that is captured in one fault. This information can help spa technicians diagnose and fix issues. The sequence on the next page shows how to view the fault log.

Not every entry in the Fault Log is an actual “fault”. For example, message code MO19 is inserted into the fault log to identify each time the spa restarts.

INFORMATION CONTAINED IN ONE FAULT



SEQUENCE



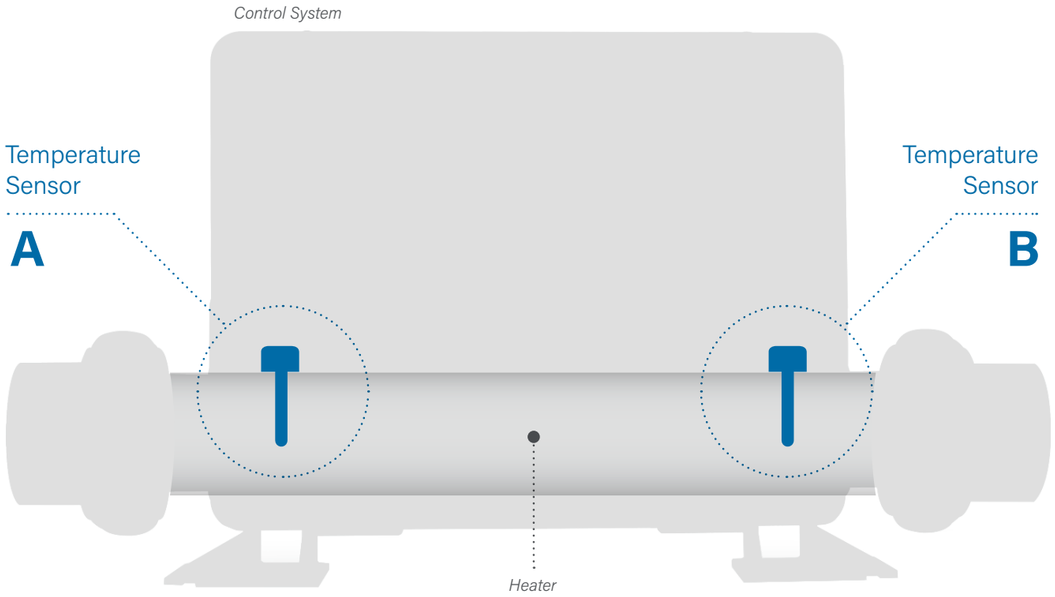
UTILITIES

TEMPERATURE SENSOR READINGS

The control system calculates water temperature by using readings from two sensors located inside the heater (view below). One sensor is named A; the other, B.

Going from left to right, the sensor order may be A and B, or B and A. The order depends on how the sensors are connected to the control system.

Spa technicians can view separate readings directly from sensor A and sensor B for diagnostic purposes.

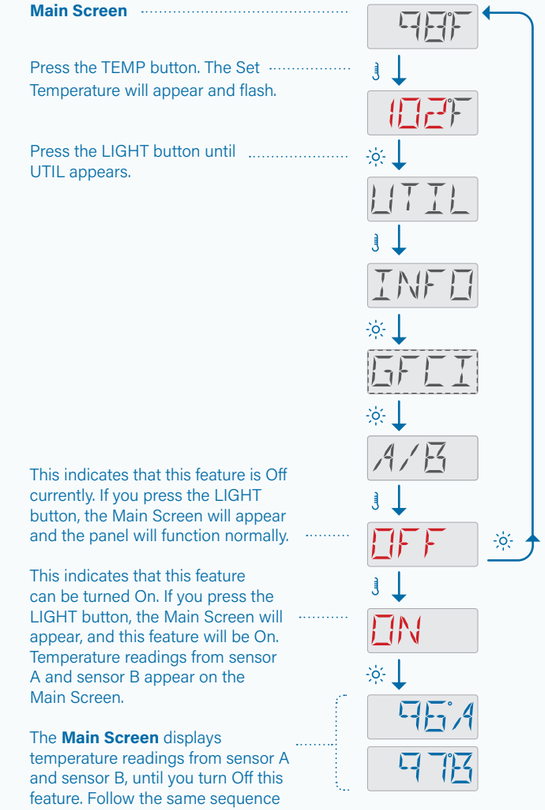


Follow this sequence to view separate temperature readings from sensor A and sensor B on the Main screen.

SEQUENCE KEY
(View page 2 for full description)

- Flashing characters
- Progressive message
- Press TEMP button for “action”
- Press LIGHT button to “select”
- Pause / back to Main Screen / setting not saved
- Pause / back to Main Screen / setting saved
- Menu Items may or may not appear

SEQUENCE



WARNING! Qualified Technician Required for Service and Installation.

Basic Installation and Configuration Guidelines

- Use minimum 6AWG copper conductors only.
- Torque field connections between 21 and 23 in lbs.
- Readily accessible disconnecting means to be provided at time of installation.
- Permanently connected.
- Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.
- CSA enclosure: Type 2
- Refer to Wiring Diagram inside the cover of the control enclosure.
- Refer to Installation and Safety Instructions provided by the spa manufacturer.

Warning: People with infectious diseases should not use a spa or hot tub.

Warning: To avoid injury, exercise care when entering or exiting the spa or hot tub.

Warning: Do not use a spa or hot tub immediately following strenuous exercise.

Warning: Prolonged immersion in a spa or hot tub may be injurious to your health.

Warning: Maintain water chemistry in accordance with the Manufacturers instructions.

Warning: The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

Warning! GFCI or RCD Protection.

The Owner should test and reset the GFCI or RCD on a regular basis to verify its function.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

CSA Compliance/Conformité

Caution:

- Test the ground fault circuit interrupter or residual current device before each use of the spa.
- Read the instruction manual.
- Adequate drainage must be provided if the equipment is to be installed in a pit.
- For use only within an enclosure rated CSA Enclosure 3.
- Connect only to a circuit protected by a Class A ground fault circuit interrupter or residual current device.
- To ensure continued protection against shock hazard, use only identical replacement parts when servicing.
- Install a suitably rated suction guard to match the maximum flow rate marked.

Warning:

- Water temperature in excess of 38°C may be injurious to your health.
- Disconnect the electrical power before servicing.

Attention:

- Toujours verifier l'efficacite du disjoncteur differentiel avant d'utiliser differentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installe dans une fosse, on doit assurer un drainage adequat.
- Employer uniquement a l'interieur d'une cloture CSA Enclosure 3.
- Connecter uniquement a un circuit protege par un disjoncteur differentiel de Class A.
- Afin d'assurer une protection permanente contre le danger de shock electrique, lors de l'entretien employer seulement des pieces de rechange identiques.
- Les prises d'aspiration doivent etre equipees de grilles convenant au debit maximal indique.

Avertissement:

- Des temperatures de l'eau superieures a 38°C peuvent presenter un danger pour la sante.
- Deconnecter du circuit d'alimentation electrique avante l'entretien.

Warning/Advertissement:

- Disconnect the electric power before servicing. Keep access door closed.
- Deconnecter du circuit d'alimentation electrique avant l'entretien. Garder la porte fermer.

INFORMATION

TP200 SUPPORT

Trademark | Patent Notices

Products are covered under one of more of the following US Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6282370, 6590188, 7030343, 7, 417, 834 B2 & Canadian Pt 2342614 plus others. Other patents both foreign and domestic applied for and pending.

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Specifications subject to change without notice.

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