T8 Topside

For C5 Series Control Boxes with the T8 Topside
Revision 12.12
End User Disclaimer:

United controls have absolutely no end user serviceable parts. United does not authorize attempts by the spa owner/user to install or repair/service any United products.

Non-qualified users should never open or remove the control box’s cover, as this will expose dangerous voltage points and other serious risks.

Non-qualified users should not attempt to make changes to the topside’s programming, as mis-programming can result in malfunction or possible damage.

Please contact your dealer or a locally licensed service center for service and technical support.
Warranty Disclaimer:

It is extremely important that any user read this user’s guide in its entirety before attempting to operate this United Spas control. Any damage that may occur due to misuse may void the warranty. See warranty page for more information.

Safety Disclaimer:

When using this electrical equipment, basic safety precautions should always be followed. Read and follow the important safety instructions in the safety section before and during use.
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Important Safety Instructions:

When using this electrical equipment, basic safety precautions should always be followed, including the following.

Read and follow all instructions!

1. **Warning:** Children should not use spas or hot tubs without adult supervision

   **AVERTISSEMENT:** NE PAS LAISSER LES ENFANTS UTILISER UNE CUVE DE RELAXATION SANS SURVEILLANCE

2. **Warning:** Do not use the spa unless all suction guards are installed to prevent body and hair entrapment

   **AVERTISSEMENT:** POUR ÉVITER QUE LES CHEVEUX OU UNE PARTIE DU CORPS PUISSENT ÊTRE ASPIRÉS, NE PAS UTILISER UNE CUVE DE RELAXATION SI LES GRILLES DE PRISE D’ASPIRATION NE SONT PAS TOUTES EN PLACE.

3. **Warning:** People using medication and/or having an adverse medical history should consult a physician before using a spa or hot tub

   **AVERTISSEMENT:** LES PERSONNES QUI PRENNENT DES MÉDICAMENTS OU ONT DES PROBLÈMES DE SANTÉ DEVRAIENT CONSULTER UN MÉDECIN AVANT D’UTILISER UNE DE RELAXATION

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

   **AVERTISSEMENT:** LES PERSONNES ATTEINTES DE MALADIES INFECTIEUSES NE DEVRAIENT PAS UTILISER UNE CUVE DE RELAXATION
5. **Warning:** To avoid injury exercise care when entering or exiting the spa or hot tub

*AVERTISSEMENT: POUR ÉVITER DES BLESSURES, USER DE PRUDENCE EN ENTRANT DANS UNE CUVE DE RELAXATION ET EN SORTANT*

6. **Warning:** Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning

*AVERTISSEMENT: POUR ÉVITER L'ÉVANOUISSEMENT ET LA NOYADE ÉVENTUELLE, NE PRENDRE NI ALCOOL AVANT D'UTILISER UNE CUVE DE RELAXATION NI QUAND ON S’Y TROUVE*

7. **Warning:** Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub

*AVERTISSEMENT: LES FEMMES ENCEINTES, QUE LEUR GROSSESSE SOIT CONFIRMÉE OU NON, DEVRAIENT CONSULTER UN MÉDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION*

8. **Warning:** Water temperature in excess of 100°F (38°C) may be injurious to your health.

*AVERTISSEMENT: IL PEUT ÊTRE DANGEREUX POUR LA SANTÉ DE SE PLONGER DANS DE L'EAU À PLUS DE 38° C (100° F)*

9. **Warning:** Before entering a spa or hot tub measure the water temperature with an accurate thermometer

*AVERTISSEMENT: AVANT D'UTILISER UNE CUVE DE RELAXATION MESURER LA TEMPÉRATURE DE L'EAU À L'AIDE D’UN THERMOMÈTRE PRÉCIS*

10. **Warning:** Do not use a spa or hot tub immediately following strenuous exercise
AVERTISSEMENT: NE PAS UTILISER UNE CUVE DE RELAXATION IMMÉDIATEMENT APRÈS UN EXERCICE FATIGANT

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

AVERTISSEMENT: L’UTILISATION PROLONGÉE D’UNE CUVE DE RELAXATION PEUT ÊTRE DANGEREUSE POUR LA SANTÉ

12. **Warning:** Do not permit electric appliances (such as a light, telephone, radio, or television) within 5 feet (1.5 m) of this spa or hot tub

AVERTISSEMENT: NE PAS PLACER D’APPAREIL ÉLECTRIQUE (LUMINAIRE, TÉLÉPHONE, RADIO, TÉLÉVISEUR, ETC) À MOINS DE 1.5M (5 FEET) DE CETTE CUVE DE RELAXATION

13. **Caution:** Maintain water chemistry in accordance with manufacturer’s instruction

ATTENTION: LA TENEUR DE L’EAU EN MATIÈRES DISSOUTES DOIT ÊTRE CONFORME AUX DIRECTIVES DU FABRICANT

14. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F (37°C). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body.

   Effects:  
   1- Unawareness of impending hazard.  
   2- Fetal damage in pregnant women.  
   3- Failure to recognize the need to exit spa.  
   4- Physical inability to exit spa.  
   5- Unconsciousness and danger of drowning.  
   6- Failure to perceive heat.

15. **Warning:** The use of alcohol or drugs can greatly increase the risk of fatal hyperthermia in hot tubs and spas

AVERTISSEMENT: LA CONSOMMATION D’ALCOOL OU DE DROGUES AUGMENTE CONSIDÉRABLEMENT LES RISQUES D’HYPERTHERMIE MORTELLE DANS UNE CUVE DE RELAXATION
Topside Installation Preparation

The T8 topside control requires a 5 3/8” (138 mm) x 2 1/8” (55 mm) cutout in the shell of the hot tub to be installed. You’ll need to use a jig-saw to create this cutout where you’ll be installing the topside.

Topside Control Installation

Once ready to install, plug one end of the topside cable into the back of the T8 topside control, and snake the topside cable through the cutout in the spa’s shell and down to the control box. Then plug the opposite end of the topside cable into the topside receptacle on the control box.

Simply affix the topside to the hot tub by peeling off the paper over the adhesive back of the topside and press it firmly into place, slowly pressing all around the perimeter of the topside firmly to assure a firm bond.

NOTE: Do NOT connect/disconnect the T8 topside while the control box has power going to it. Always make sure the power is shut off at the breaker before removing/installing a topside, as to avoid damaging the electronics.
About The T8 Topside

The T8 Topside

You will be using the T8 topside to operate your United C5 Series control box. The T8 is pictured below, with the descriptions of the items that will be referenced throughout this user’s guide.

1 - LED Display
2 - Jets-1 Button & Indicator Light
3 - Jets-2 Button & Indicator Light
4 - Aux Button & Indicator Light
5 - Light Button
6 - Temp Down Button
7 - Heat Indicator Light
8 - Temp Down Button
Using The T8 Topside

The T8 topside uses technology. This hybrid switching technology marries the satisfaction of having a physical button to press, with the longevity and reliability of touch-panel switching system with no moving parts to break down over time.

If your button presses are not registering, make sure that you are pushing the raised buttons completely flat against the panel, and that you are waiting a second between button presses.
T8 Topside Configuration

Once the control box and topside have been properly installed, you can power up the unit and program the topside for the control's desired equipment and operational configuration.

Upon Power-Up

Whenever the T8 topside is powered on, the unit will briefly flash between ‘T8’ and the current software version by showing an ‘S’ followed by a number (Example: ‘S01’) while it starts up. All configurable settings are saved to permanent memory, the only thing that needs to be set upon power-up of a T8 topside that has already been configured previously is the current time (it will default to 12 AM upon power-up).

T8 Topside Configuration Codes

There are five codes that can be configured. Each code has a number of options the code can be set to. By default, all codes are set to their first option (Option 1).

Use the code chart on the next page to figure out which options you’ll need to set for each code for the hot tub the control is being installed into.

Once you know what options all the codes should be set to, turn to the pages that follow for instructions on entering the configuration programming mode, and how to select the different options for each code.
T8 Configuration Code Chart

**Code 1**: Jet-1 Button Configuration
- Option 1: Jet-1 button operates Hi-Speed Pump-1
- Option 2: Jet-1 button operates Lo-Speed and Hi-Speed Pump-1

**Code 2**: Jet-2 Button Configuration
- Option 1: Jet-2 button operates Lo-Speed Pump-1
- Option 2: Jet-2 button operates Hi-Speed Pump-2
- Option 3: Jet-2 button operates Lo-Speed and Hi-Speed Pump-2

**Code 3**: Aux Button Configuration
- Option 1: Aux button used only for programming
- Option 2: Aux button used for Air Blower
- Option 3: Aux button operates Hi-Speed Pump-3

**Code 4**: Power (Amperage) Configuration
- Option 1: 50A Operation (No heat with Aux)
- Option 2: 60A Operation (No power restriction)
- Option 3: 50A Operation (No heat with P-2)
- Option 4: 40A Operation (No heat with P-2, and Aux)
- Option 5: 20A 120V Operation or 30A 240V Operation (No heat with anything other then P-1 Lo-Speed)

**Code 5**: Heater Operation
- Option 1: Electric Heater operates with Lo-Speed Pump-1
- Option 2: Electric Heater operates with Circulation Pump
- Option 3: External Gas Heater operates with Lo-Speed Pump-1
- Option 4: Electric Heater operates with Timed Circulation Pump **
- Option 5: Electric Heater operates with Circulation Pump but uses low-speed Pump-1 for the filtration cycle.

** - When setting Code 5 to Option 4 it is important to make sure that Pump-1 is wired as a single speed (Hi-Speed) pump - and not connected to the red (Lo-Speed) wire. In addition the Circulation Pump cord will need to be reconfigured to use the receptacles red wire for the power line going to the circulation pump.
Conflicting Codes

You may notice, when programming the topside that certain codes may not be visible/selectable. This means you have another code set to an option that conflicts with the missing option. So if you program the topside to use an air blower or third pump on the Aux button, you will no longer see the code option allowing the Jets-2 button to operate Lo-Speed of Pump-2 (since those functions all use the same relay). Likewise, you will not be able to set Code 5 to Option 4 if Code 1 is set to Option 2 and/or Code 2 is set to Option 1.

Entering The T8 Topside’s Programming Mode

Once you’ve gone over the code chart and have chosen the options you want to set for each code, follow these instructions for entering the programming mode and setting the options. There is a 15 second time-out delay, so taking longer then 15 seconds between steps will cause the topside to time-out and resume normal operation.

Step 1
Press and hold until the display reads (Approx. 6 seconds)

Step 2
Then lift your finger and press for another 6 seconds, until the display reads

Step 3
Then press to see the first code

Code 1 - Option 1
Changing The T8 Topside’s Configuration Codes

Once you have entered the programming mode, you will have Code 1 and the Option it is set to on the display. This is displayed as ‘C-O’, where C is the current Code, and the O is the currently selected/enabled Option for that code. While in programming mode the same 15 second time-out applies, if you take longer then 15 seconds to change a code’s selected option or cycle through to the next code, all settings will be saved and the topside will time-out and resume normal operation.

While in Programming Mode

Press up to change the selected Option of the displayed Code

Press down to cycle to the next Code

Or press AUX to save all settings and exit Programming Mode
User Configurable Settings

T8 User Settings Menu

The T8’s user settings menu is home to all of the user configurable settings of the T8 topside. The Heating Mode setting is the first setting in the user settings menu. See the following page for a full menu tree.

Later in this section the individual settings will be explained in further detail. What follows are general instructions on getting into, maneuvering, and making and saving changes to these settings, which will be referenced throughout this section.

Entering the User Settings Menu

Step 1
Press and hold \[\text{AUX}\] until the display reads (Approx. 6 seconds)

Step 2
Then lift your finger, and press \[\text{AUX}\] to see the first setting.

Using the User Settings Menu

Press \[\text{AUX}\] to cycle through the different settings

Press \[\text{AUX}\] to cycle through the displayed setting’s options

Press \[\text{AUX}\] to save your settings and exit - or - let the topside time-out and save the settings and return to the temperature display on its own (in about 15 seconds).
User Configurable Settings

Hour Setting

12:A thru 12:P

Minute Setting

--:01 thru --:59

(The ‘--’ will actually be the currently set hour)

Heating Mode

HST or HEC

Standard or Economy

Filtration Cycle Duration

F00 thru F12

0 Hours (No Filtration) or 12 Hours

Filter Cycle 1 - Start Time

FC1

12:A thru 11:P or --:--

Filter Cycle 2 - Start Time

FC2

12:A thru 11:P or --:--

Continued on next page...
User Configurable Settings

User Settings

... Continued from previous page

Filtration

Purge Setting

Purge ON

or

Purge OFF

User Interface

Temperature Display Setting

Fahrenheit

or

Celsius

Buzzer Setting

Buzzer ON

or

Buzzer OFF

Time Display Setting

Show Temp & Time

or

Show Temp Only
Time Settings

The first two user configurable settings are for setting the system time. The first setting is the Hour Setting: Simply select the current hour of day - pressing ‘Temp Up’ will cycle from 12 AM (‘12:A’) to 12 PM (‘12:P’). Pressing ‘Temp Down’ takes you to the next setting. The second setting is the Minutes Setting: Simple select however minutes it currently is past the hour - pressing ‘Temp Up’ will cycle from ‘--:00’ thru ‘--:59’.

Heating Modes: ‘Standard’ and ‘Economy’

The T8 is set by default to operate in ‘Standard’ heating mode. This means that when the temperature of the water in the spa drops below the set temperature, the control automatically start heating, bringing Lo-Speed of Pump-1 (if there is no 24 hour Circulation Pump) on as necessary. If there is a Circulation Pump, but control has been set/wired for timed operation, then the control will automatically bring it on as needed for heat. When the control is heating, the ‘Heat’ indicator light will be lit, and the display will flash between the current temperature and ‘HEAt’.

The T8 can also be set to operate in ‘Economy’ heating mode, where the heater will only maintain the set temperature when Lo-Speed of Pump-1 is manually activated (if there is no Circulation Pump), or during filtration cycles. In ‘Economy’ mode, if the current temperature falls below the set heat temperature, the ‘Heat’ indicator light will flash to let you know that the unit would be heating if not in Economy Mode.

Note: If you have a Circulation Pump that operates 24 hours a day, economy mode will not effect heating behavior, and the control will continue to heat as needed to maintain the set temperature.

T8 Filtration Cycle Operation

The T8 topside can be set to run two filtration cycles a day. It is during these filtration cycles that the control will run the spa’s ozonator, if one is installed. The following section will show you how to set the next four settings after the Heating Mode setting which all have to do with filtration.
User Configurable Settings

Filtration Cycle Duration

The filtration cycle duration setting can be set from 0 (‘F00’) to 12 (‘F12’) hours. If set to zero, there will be no filtration cycles. A setting of 1-12 will set the duration of each filtration cycle accordingly.

Filtration Cycle 1 - Start Time

When scrolling through the user programmable settings, Filter Cycle 1’s Start Time will show up as ‘FC1’. Pressing ‘Temp Up’ will show the hour of day the first filtration cycle starts. This can be set from 12 AM (‘12:A’) to 12 PM (‘12:P’).

Filtration Cycle 2 - Start Time

When scrolling through the user programmable settings, Filter Cycle 2’s Start Time will show up as ‘FC2’. Pressing ‘Temp Up’ will show the hour of day the first filtration cycle starts. This can be set from 12 AM (‘12:A’) to 12 PM (‘12:P’).

Purge Setting

When the Purge Setting is turned on (‘Pon’), the control will automatically purge the plumbing whatever the system is programmed to operate (Pump-1 / Pump-2 / Aux) at the beginning of each filtration cycle. It does this by running each component for 30 seconds (on low speed where applicable), pausing 30 seconds between each component, starting 1 minute after the beginning of each cycle. This serves to push any water currently in those components' plumbing back into the main body of water for circulation and filtration.
User Configurable Settings

Temperature Display Setting

The T8 topside can display the temperature in either Fahrenheit (‘tFH’) or Celsius (‘tCE’). The default setting is Fahrenheit.

Buzzer Setting

By default the T8 topside will sound an internal buzzer when a button press is registered. Simply toggle this code off (‘boF’) to disable the buzzer.

Time Display Setting

By default the T8 topside’s display will flash between the current time, and the current temperature during normal operation. This is considered having the Time Display Setting turned on (‘ton’). Turning this setting off (‘toF’) will make it so that the T8’s displays just the current temperature (time is not displayed) during normal operation. It is still important to set the time whether or not this setting is turned off, as the control still keeps time and uses it for the timing of filtration cycles whether or not you wish to have the time displayed during normal operation.

A video walking through configuring the T8’s user configurable settings can be found on YouTube. For your convenience, you can visit the following URL to be redirected directly to the T8 User Configurable Settings Video:

unitedspas.com/T8/PL1
Setting the Temperature

The temperature may be set to heat the spa water between 40°F (4°C) and 104°F (40°C).

Pressing or displays the currently set temperature for approximately 4 seconds.

While the currently set temperature is being displayed:

Press to increase the set temperature. You can press and release right away to raise the setting incrementally by one degree, or keep the button pressed to scroll through higher temperature settings and release the button once the desired temperature is displayed.

Press to increase the set temperature. You can press and release right away to raise the setting incrementally by one degree, or keep the button pressed to scroll through higher temperature settings and release the button once the desired temperature is displayed.

When the control is heating...

When the control is heating, the indicator light between the temp buttons will be lit, and the display will flash between the current temperature and ‘HEAt’ as shown. If the indicator light between the temp buttons is flashing, this indicates the control would be heating, but is currently set to economy mode.
Operating Pump-1

The operation of Pump-1 depends on the configuration of your control:

**Pump-1 Operation on Single Pump Systems**

Press \[\text{JETS 1}\] to toggle Hi-Speed between On/Off. (Will override Lo-Speed, if on)

Press \[\text{JETS 2}\] to toggle Lo-Speed between On/Off. (Will override Hi-Speed, if on)

**Pump-1 Operation on Dual (or Triple) Pump Systems**

Press \[\text{JETS 1}\] to toggle between Lo-Speed/Hi-Speed/Off.

Whenever Hi-Speed of Pump-1 is running the ‘Jets-1’ indicator light will be lit. Likewise, whenever Lo-Speed of Pump-1 is running the ‘Jets-1’ indicator light will flash.

Pump-1 will automatically shut off after 30 minutes of operation when turned on manually. Should a system that uses Pump-1 for heating/filtration enter a heat or filtration cycle during manual operation of Pump-1, the pump will continue low speed operation until the cycle is complete.
Operation Instructions

Operating Pump-2 (If Applicable)

If your control is configured for a secondary pump, its operation depends on if it’s configured to run a single speed Pump-2, or dual speed Pump-2:

**Single Speed Pump-2 Operation**

Press ![JETS 2](image1) to toggle between On/Off.

**Dual Speed Pump-2 Operation**

Press ![JETS 2](image2) to toggle between Lo-Speed/Hi-Speed/Off.

In the Single Speed Pump-2 configuration the ‘Jets-2’ indicator light will be lit when Pump-2 is on. In the Dual Speed Pump-2 configuration, when Hi-Speed is running the ‘Jets-2’ indicator light will be lit. Likewise, whenever Lo-Speed of Pump-2 is running the ‘Jets-2’ indicator light will flash.

Pump-2 will automatically shut off after 30 minutes of operation.
Operating Aux (Pump-3/Air Blower - If Applicable)

If your control is configured to operate an auxiliary component, its operation is identical, whether it is configured to run a single speed Pump-3, or an Air Blower:

Press the **AUX** button to toggle between On/Off.

Whenever Aux is active, the ‘Aux’ indicator light will be lit.

Aux will automatically shut off after 30 minutes of operation.

Operating the Spa Light

To operate the spa light, simply press the **LIGHT** button to toggle between On/Off.

The light will automatically shut-off after 4 hours of operation.

**Note:** If your spa also has a United Spas Multi-Function LED Light installed in it, you can simply turn the light off and on again within 3 seconds to cycle to the next color function. Almost any spa using an industry standard 12V light harness can be upgraded to a United Spas Multi-Function LED Light. For more information, please contact your local dealer or serviceman for more information.
Filtration Cycle - A filtration cycle is currently in progress. This flashing message will disappear on its own once the current filtration cycle completes.

Heat - The spa is heating. This message will disappear once the heater shuts off.

Freeze Protection - One of the sensors is reading under 45°F/8°C. Lo-Speed Pump-1 cannot be shut off, and no other equipment will function until the sensors read that the water has risen to at least 48°F/9°C. Once that happens, this message will disappear.

Software Overheat - The temperature sensor is reading over 113°F/45°C. Once the temperature drops to at least 103°F/39°C press and hold the Temp Down button for 10 seconds to reset.

Hardware Overheat - The hi-limit sensor is reading over 116°F/46°C. Once the temperature drops to at least 103°F/39°C press and hold the Temp Down button for 10 seconds to reset. Until the unit reaches 103°F/39°C Lo-Speed Pump-1 will be kept running in attempt to evenly distribute the build-up of heat.

Temperature Sensor Error - The temperature sensor is malfunctioning, or not properly connected. Reconnect or replace temperature sensor as needed.

Hi-Limit Sensor Error - The hi-limit sensor is malfunctioning, or not properly connected. Reconnect or replace temperature sensor as needed.

Flow Error - The pressure switch is not registering enough flow for safe heater operation. Check pressure switch and pump/plumbing/water flow.