INSTALLATION & OPERATION MANUAL

E3T®

Electric Heater

MODELS:

ELS 0005-1-TIB
ELS 0011-1-TIB
ELS 0018-1-TIB
ELS 0027-1-TIB

This installation and operation manual applies ONLY to models of E3T Single-Phase Pool/Spa heaters manufactured after June of 2024.

NOTICE

SCAN WITH QR EQUIPPED SMART DEVICE FOR ONLINE MANUAL.

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LISTED
E68949

Tested to UL Standard 1261

Certified to CEC Title 20

FOR YOUR SAFETY: Do not store or use gasoline or other flammable vapors and liquids or other combustible materials in the vicinity of this or any other appliance. To do so may result in an explosion or fire.

NOTE: The instructions in this manual are for the use of qualified individuals specially trained and experienced in the installation and maintenance of this type of equipment and related system components. Installation and service personnel are required by some states to be licensed. Persons not qualified shall not attempt to install, service, or maintain this equipment.

This manual should be maintained in legible condition and kept adjacent to the electric heater or in a safe place for future use.

Raypak® A Rheem® Company

Effective: 05-19-24
Replaces: 08-23-23
P/N 100-10000902 Rev. 04

NOTICE
This installation and operation manual applies only to models of E3T Single- Phase Pool/Spa heaters manufactured after June of 2024 denoted as "TIB" in the model nomenclature. Applicable products as follows:

PRODUCT MODELS
ELS-0005-1-TIB
ELS-0011-1-TIB
ELS-0018-1-TIB
ELS-0027-1-TIB

Revision 04 reflects the following changes:
Part numbers updated throughout to display "-1-TIB" at the end of the text string for all sizes. Added "Low Voltage Output" to Table B. Created a dedicated page for Pressure Drop information. Created a heading for Error Codes. Updated IPL part numbers for items 8 thru 15.

TABLE OF CONTENTS

THIS INSTALLATION MANUAL MAY NOT BE THE LATEST REVISION PRINTED AT THE TIME OF PRODUCT SHIPMENT. VISIT THE RAYPAK WEBSITE TO VERIFY THE MANUAL DELIVERED WITH YOUR RAYPAK UNIT IS THE MOST UP-TO-DATE VERSION.

1. WARNINGS

Pay Attention to these Terms

⚠DANGER	Indicates the presence of immediate hazards which will cause severe personal injury, death or substantial property damage if ignored.
⚠WARNING	Indicates the presence of hazards or unsafe practices which could cause severe personal injury, death or substantial property damage if ignored.
⚠CAUTION	Indicates the presence of hazards or unsafe practices which could cause minor personal injury or product or property damage if ignored.
CAUTION	CAUTION used without the warning alert symbol indicates a potentially hazardous condition which could cause minor personal injury or product or property damage if ignored.
NOTE	Indicates special instructions on installation, operation, or maintenance which are important but not related to personal injury hazards.

⚠WARNING: Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect and replace the heater.

⚠WARNING: To minimize the possibility of improper operation, serious personal injury, fire, or damage to the heater:

- **Always keep the area around the heater free of combustible materials, gasoline, and other flammable liquids and vapors.**
- **Heater should never be covered or have any blockage to the flow of fresh air to the heater.**

EFFICIENCY TESTING NOTICE: For purposes of verifying or testing efficiency ratings, the test procedure in Title 10 APPENDIX P to Subpart B of Part 430 (Uniform Test Method for Measuring the Energy Consumption of Pool Heaters).

⚠WARNING: Risk of electrical shock. More than one disconnect switch may be required to de-energize the equipment before servicing.

2. WATER CHEMISTRY

⚠CAUTION: Corrosive water voids all warranties

For your health and the protection of your pool equipment, it is essential that your water be chemically balanced. The levels shown in **Table A** must be used as a guide for balanced water.

Pool/Spa Water Chemistry

Occasional chemical shock dosing of the pool or spa should not damage the heat exchanger providing the water is balanced. Automatic chemical dosing devices and salt chlorinators are usually more efficient in heated water. If not controlled, they can lead to high chemical levels which can damage the heat exchanger. Further advice should be obtained from your pool or spa builder, accredited pool shop, or chemical supplier for the correct levels for your water.

Water Chemistry	Allowable Levels
Water Temperature	68-104°F (20-40°C)
pH	7.6-7.8
Total Alkalinity (ppm)	80-120
Calcium Hardness (ppm)	200-400
Salt (ppm)	4500 Maximum
Free Chlorine (ppm)*	2-3
Total Dissolved Solids (ppm)	3000 Maximum**

*Free Chlorine MUST NOT EXCEED 5 ppm!

**In saltwater chlorinated pools, the total TDS can be as high as 6000 ppm.

Table A. Spa and Pool Water Chemistry

Automatic Chlorinators and Chemical Feeders

All chemicals must be introduced downstream of the heater and completely diluted into the water before being circulated through the heater. Chlorinators must feed downstream of the heat exchanger and have an anti-siphoning device or check valve to prevent chemical back-up into the heat exchanger when the pool filtration pump is shut off.

⚠CAUTION: High chemical concentrations from feeders that are out of adjustment will cause rapid corrosion of the heat exchanger. Such damage is not covered under the warranty.

⚠CAUTION: Failure of a heat exchanger due to lime scale build-up on the heating surface, low pH, or other chemical imbalance is not covered under the warranty.

3. SAFETY INFORMATION

Pool water temperatures typically range from 78°F (26°C) to 82°F (28°C). The American Red Cross recommends a temperature of 78°F (26°C) for competitive swimming. However, this may be too cool for young children and the elderly, who may require a temperature of 80°F (27°C) or higher.

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS GIVEN IN THIS MANUAL.

The water in a spa or pool should never exceed 104°F (40°C). A water temperature in excess of 104°F (40°C) is considered unsafe for all persons. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and for young children.

Excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy. Pregnant or possibly pregnant women should limit spa or pool water temperatures to 100°F (38°C).

Before entering a spa or pool, the user should measure the water temperature at several locations using an accurate thermometer since the tolerance of water temperature - regulating devices may vary as much as much as +/- 5°F (3°C).

Alcohol, drugs or medication should not be used before or during spa or pool use since their use may lead to unconsciousness with the possibility of drowning.

Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa or pool.

Persons using medication should consult a physician before using a spa or pool since some medication may induce drowsiness while other medication may affect heart rate, blood pressure and circulation.

Prolonged immersion in hot water may induce hypothermia. Hypothermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F (37°C).

The symptoms include dizziness, fainting, drowsiness, lethargy and an increase in the internal temperature of the body. The effects of hypothermia include: Unawareness of impending hazard, failure to perceive heat, failure to recognize the need to exit spa or pool, physical inability to exit spa or pool, fetal damage in pregnant women and unconsciousness resulting in a danger of drowning.

SAVE THESE INSTRUCTIONS!

4. OVERVIEW

Congratulations on the purchase of the most advanced spa/pool electrical heater in the market. To get the best performance and savings from your new heater, it is important to install the heater in accordance with our instructions and the electrical, plumbing codes applicable to your area. If you have any questions, please contact your Authorized Dealer, or visit our website at www.raypak.com.

5. BEFORE INSTALLATION

Please read these instructions thoroughly and completely before installation and before use. Failure to do so could cause property damage or serious personal injury or death and void your warranty.

By installing this product, you acknowledge the terms of the manufacturer's warranty and your Authorized Dealer's return policies. The heaters that have been installed cannot be returned. If you have any questions regarding the warranty or product return policies, please consult your Authorized Dealer prior to installation.

Open the box and carefully unpack the heater. Inspect all components.

6. INSTALLATION

IMPORTANT: This product must be installed by a licensed and qualified technician in accordance with all applicable national, state, provincial, and local Energy/ Environmental codes.

The heaters are designed for indoor or outdoor use. The heater should be mounted on a level, non-combustible surface. Heater must not be installed on carpeting. Do NOT use the shipping crate base as an installation base.

- The heater must be mounted on a vertical position over a ground level base or a wall.
- Secure the heater to the base with screws (not provided).

⚠CAUTION: Combustible materials should be kept at least 24" (610 mm) away from the heater.

Recommended Clearances:

- TOP: 18" (45.7 cm)
- SIDES: 6" (15.2 cm) away from your heater and the outlet hot water pipe.

For installations in Florida that must comply with the local codes, follow the directions shown in **Figure 2** and **Figure 3** for the installation of hurricane tie-down brackets for both 2-element and 3-element models.

7. WATER CONNECTION

IMPORTANT: When preparing the connections going to heater, make sure you do not use glue or putty. Any glue or putty going into the heater will damage the flow sensor permanently. Prior to the final connections to the heater, flush all the lines to clear any debris.

NOTE: When using two-speed pumps, do not install a gate valve on the inlet. No shutoff valves are to be installed in the piping between the spa heater outlet and the spa. If using an in-line chlorinator, a check valve must be used. Any chlorinator valves that can cause return line blockage will VOID the warranty.

Please follow all plumbing instructions carefully. This product must be installed by a licensed and qualified plumber in accordance with all applicable national, state, provincial, and local plumbing codes.

- The heater must be installed after installation of the filter.
- Models 0005-1-TIB and 0011-1-TIB are supplied with 1-1/2" NPT inlet and outlet plumbing connections.
- Models 0018-1-TIB and 0027-1-TIB are supplied with 2" NPT inlet and outlet plumbing connections.
- All heater models are rated operation **ONLY** on 240V single-phase, 60Hz power.
- Heaters are flow activated.
- No Hartford loop is required.

⚠CAUTION: Failure to follow the instructions below can cause permanent damage to the heating elements.

After tightening both fittings at the water heater, start the pump to allow water to run through the spa/pool heater for at least 5-10 minutes. This process purges all the air from the water lines and must be performed prior to turning on the power at the heater.

When any maintenance is performed on the spa/pool that may introduce air into the plumbing pipes, it is important to turn the power off to the heater and purge the air out of the lines before allowing the heater to power up.

Dry-Firing of Elements

Dry-firing of elements is caused by water voids when power is on. All air must be purged from the system before any heat start-up. It is important to purge all air after cleaning or changing a cartridge filter. The filter casing acts as an air reservoir during this procedure, the circulation system must be on for at least two (2) minutes before you turn power on to this heater.

The heater must have an adequate flow of water for proper operation. Adequate water flow removes the heat produced by the heater and transfers the heat to the spa/pool and prevents overheating. Low water flow usually results from dirty filter or improperly adjusted manual bypass. Once 15 gpm (57 lpm) has been established, the heating elements will energize 1-minute after flow is configured. This is to make sure the tank is completely filled with water and any air in the tank has had time to escape.

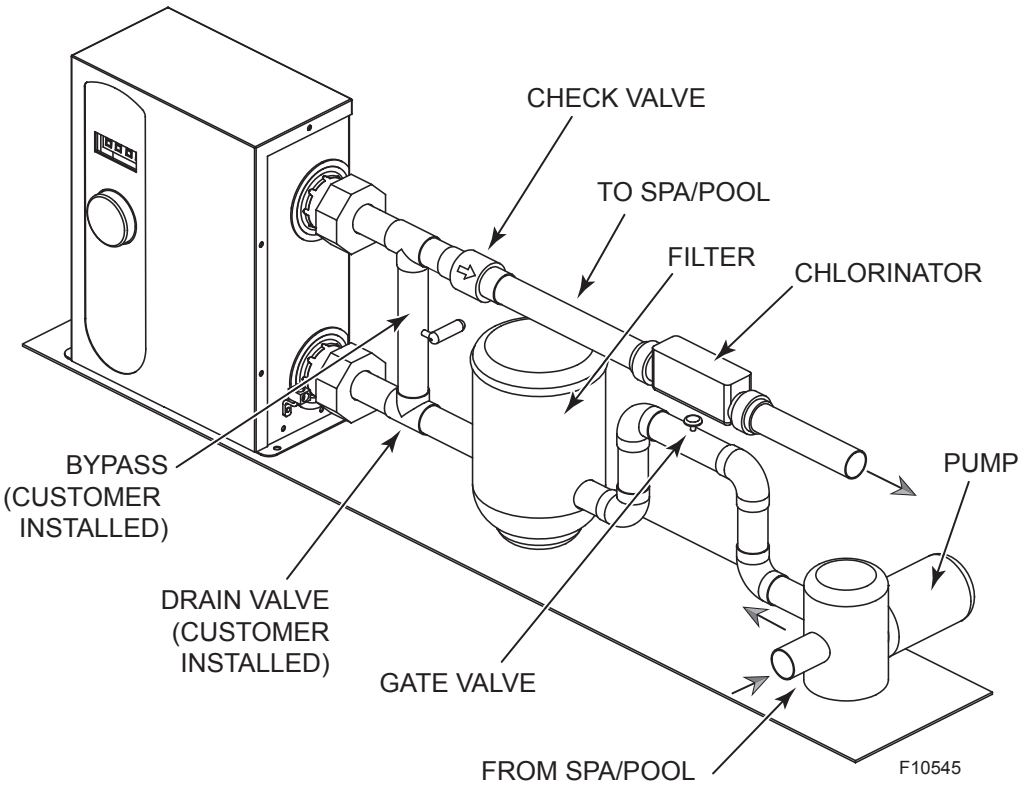


Figure 1. Spa/Pool Installation Diagram

8. PRESSURE DROP

For system pressure drop information, refer to **Table B** and **Table C** below.

The heater is designed to run at a minimum flow rate of 15 gpm (57 lpm) and maximum of 60 gpm (227 lpm). A manual bypass valve is needed when the flow rate exceeds 60 gpm (227 lpm). The heater will not energize elements if the water flow is under 15 gpm (57 lpm).

GPM (lpm)	Pressure Drop in PSI	Pressure Drop in ft. of Head
15 (57)	1.6	3.6
20 (76)	2.4	5.6
25 (95)	3.6	8.2
30 (114)	5.2	11.9
35 (132)	7.5	17.3
40 (151)	8.8	20.3
45 (170)	19.2	44.4
50 (189)	22.6	52.2
60 (227)	23.2	53.7

Table B. Pressure Drop for Models ELS 0005-1-TIB and ELS 0011-1-TIB

GPM (lpm)	Pressure Drop in PSI	Pressure drop in ft. of Head
15 (57)	2.1	4.8
20 (76)	2.8	6.6
25 (95)	3.4	8
30 (114)	5.6	12.8
35 (132)	7.2	16.5
40 (151)	8.9	20.5
45 (170)	14.1	32.7
50 (189)	17.4	40.3
60 (227)	21.4	49.5

Table C. Pressure Drop for Models ELS 0018-1-TIB and ELS 0027-1-TIB

RAIN WATER RUNOFF. The heater is designed to operate outdoors and can be exposed to rain. However, rain water runoff falling directly onto the heater from a roof can cause damage and/or shorten the life of your heater. Such damage will not be covered under warranty. Install rain gutters or rain diverters on your roof if the heater is installed in a position where contact with rain runoff may occur.

⚠CAUTION: The heater's supporting base must be high enough to keep completely free of standing water at all times.

9. FREEZE PROTECTION

If the heater is installed in a location subject to freezing conditions, it is important to protect the water circuit from freezing, just as should be done for the pump and filter.

System Drain-Down

1. Make sure the heater is disconnected or turned off.
2. With the pool pump OFF, loosen the PVC unions supplied with the heater on both inlet and outlet pipes.
3. This should allow all of the water inside the heater to drain out and prevent freeze damage to the heater.

10. ELECTRICAL CONNECTIONS

⚠WARNING: Please read these instructions thoroughly and completely before installation and before use. Failure to do so could cause property damage or serious personal injury, or death and void your warranty.

⚠WARNING: Risk of electrical shock. More than one disconnect switch may be required to de-energize the equipment before servicing.

This product must be installed by a licensed and qualified electrician in accordance with Article 680 of the National Electrical Code, NFPA 70 and with the requirements of the authority having jurisdiction and all applicable national, state, provincial, and local electrical codes.

As with all electrical appliances, under no circumstances should you attempt to install, repair or disassemble this heater without first shutting off all power to the heater directly at the fuse or breaker box.

⚠WARNING: Serious bodily injury or death could occur if you ignore shutting off all power to the heater at the fuse or breaker box.

All wiring (wire gauge) and circuit protection (breakers) must comply with the U.S. National Electrical Code (NEC) in the U.S.A., or the Canadian Electrical Code (CEC) in Canada. Failure to do so could result in property damage and/or personal injury, and void your warranty.

NOTE: The Canadian Electrical Code generally requires that all supply wires and corresponding circuit protection (breakers) used for hot water heating applications be sized to a minimum of 125% of the maximum current rating of the heater (see model specifications below for details).

Before installing this product, ensure that the home has sufficient electrical power available to handle the maximum amperage load of the applicable model. **All heaters have one (1) minute time delay on star**t. The heater will not energize the elements until 15 gpm (57 lpm) is established. A separate ground conductor for each incoming circuit is required.

⚠CAUTION: Make sure that the electrical connections are correct and all wire connections are tight and secure. Make sure that the correct breaker size and wire gauge has been used. Make sure that the heater has been connected to a ground in accordance with applicable codes.

NOTE: The heater grounding conductor shall be the same size or larger than the live power supply conductors.

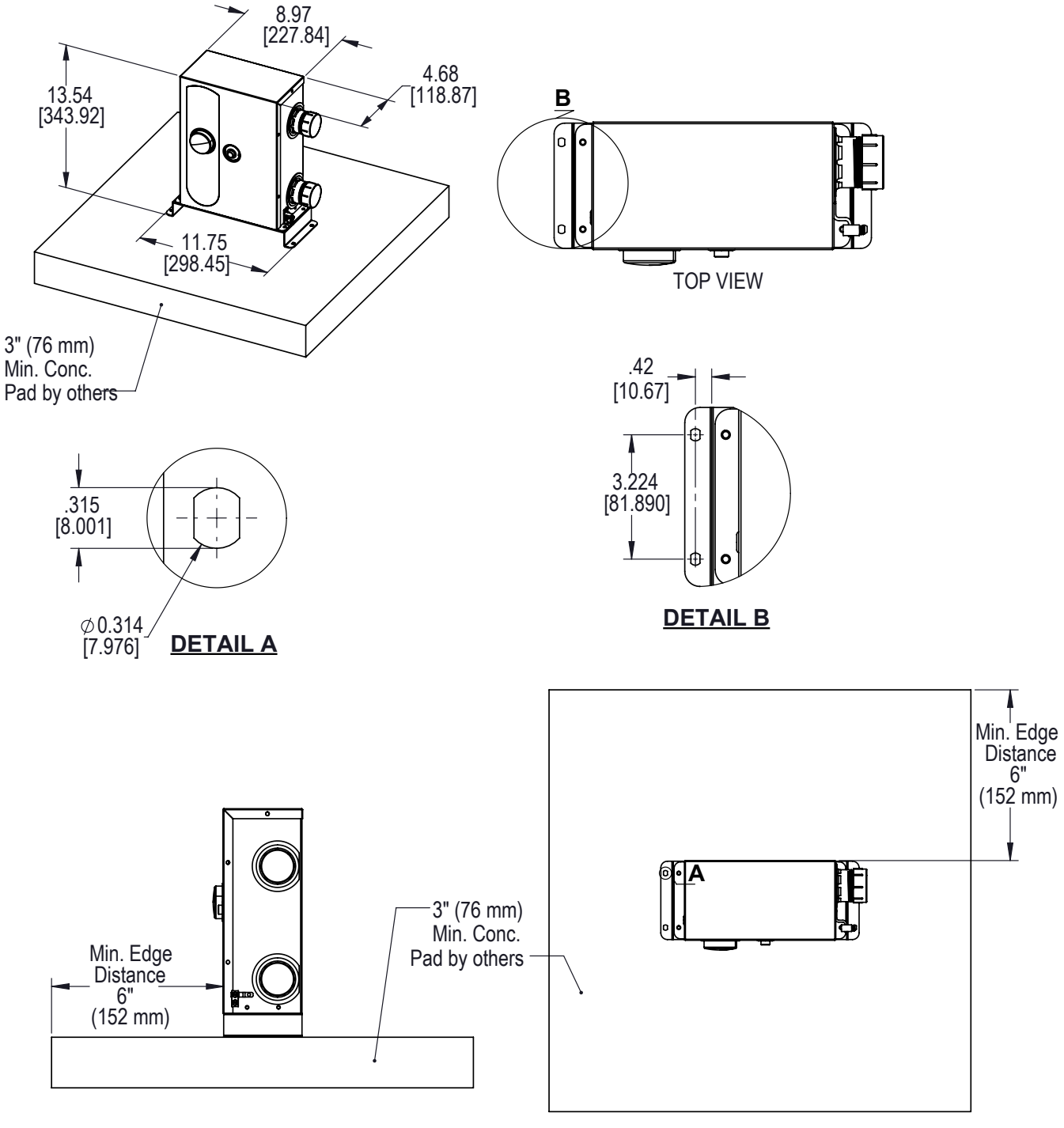


Figure 2. Hurricane Tie Down Details (2-Element Unit)

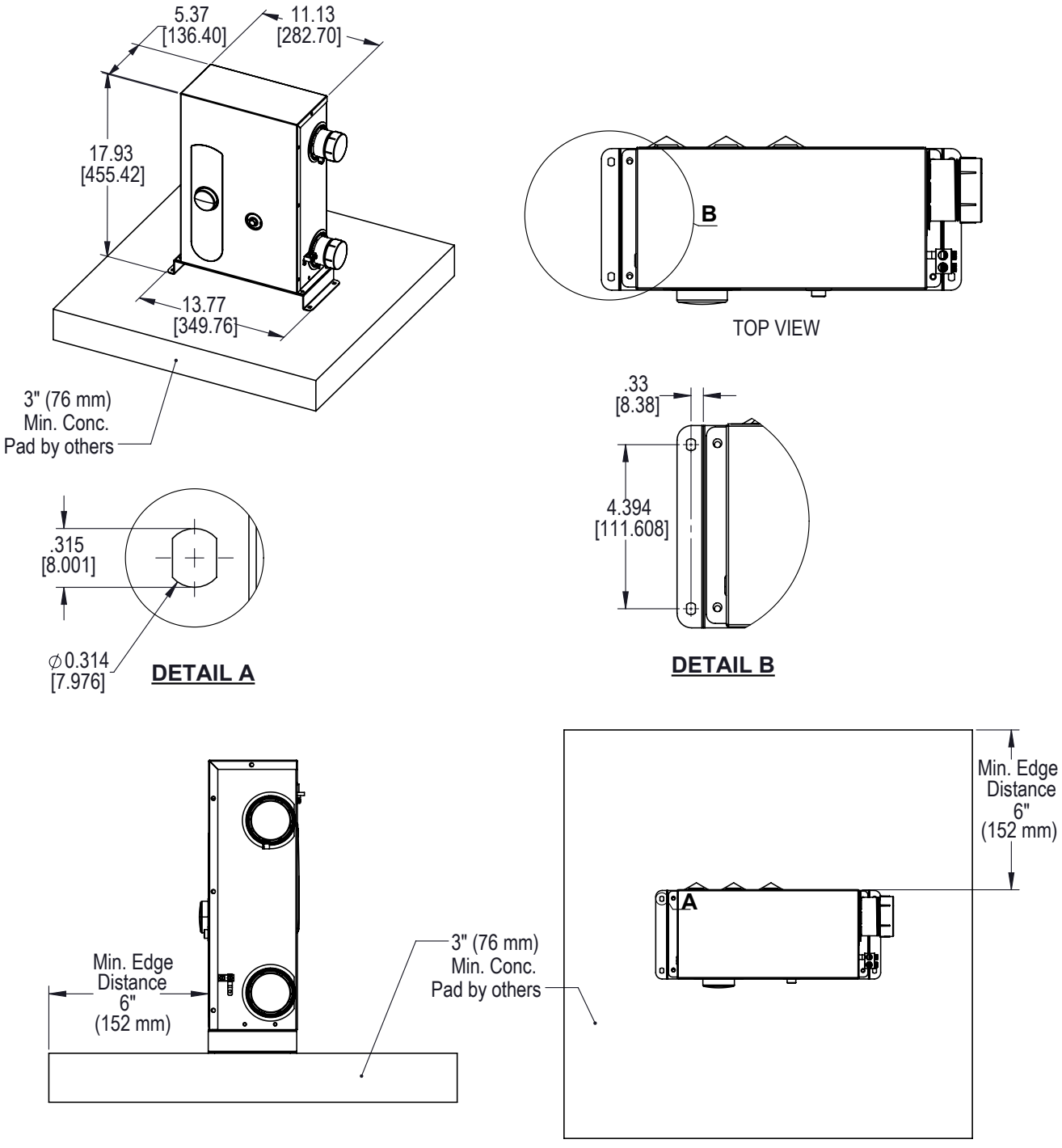


Figure 3. Hurricane Tie Down Details (3-Element Unit)

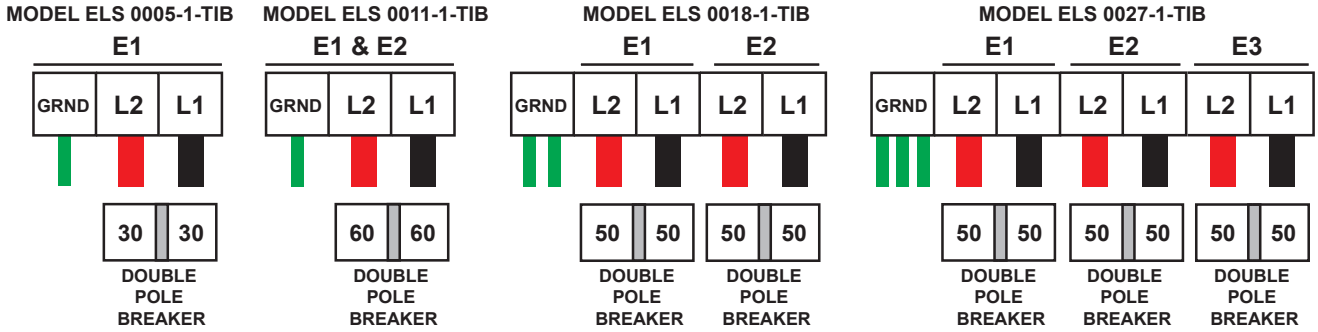


Figure 4. Wire Connection to Circuit Breakers

Properties	MODELS			
	ELS 0005-1-TIB	ELS 0011-TIB	ELS 0018-TIB	ELS 0027-TIB
Elements	1	2	2	3
Voltage	240 V	240 V	240 V	240 V
Frequency (HZ)	60	60	60	60
Power (kW)	5.5	11	18	27
Each Element Supply (kW)	5.5	5.5 (Qty 2)	9 (Qty 2)	9 (Qty 3)
Amp Draw per Element (Nominal)	23	23 x 2	37.5 x 2	37.5 x 3
Total Amp Draw (Nominal)	23	46	75	112.5
Required Breaker (min/max amps)	30/30	60/60	50/50 (Qty. 2)	50/60 (Qty. 3)
Electrical Service (amps)	100	150	150	200
Low-Voltage Output	12V	12V	12V	12V

Table D. Electrical Specification

Properties	MODELS			
	ELS 0005-1-TIB	ELS 0011-1-TIB	ELS 0018-1-TIB	ELS 0027-1-TIB
Wire Gauge	#10	#6	#8	#8
Wire Set	1	1	2	3
Breaker Amperage	30	60	50/50 (Qty. 2)	50/60 (Qty. 3)
Breaker Type	Double Pole	Double Pole	Double Pole	Double Pole
Breaker Quantity	1	1	2	3

Table E. Circuit Breaker Specification

11. OPERATION

Once the heater is installed, it can be used year-round. The user MUST makes sure the pump is not disengaged to allow it to run until the desired temperature setting is reached.

The heater will function only when there is sufficient flow through it [15 gpm (57 lpm) minimum]. On the digital control panel, press and hold the knob for five (5) seconds to check the flow rate in the unit.

Models ELS 0005-1-TIB and ELS 0011-1-TIB display the inlet temperatures on the GPM screen by turning the knob to the right. The outlet temperature is displayed by turning the knob to the left.

Models ELS 0018-1-TIB and ELS 0027-1-TIB have the outlet and inlet temperatures displayed at all times.

The unit also has a one (1) minute built-in TIME DELAY to protect it from air in the lines and to avoid burning out the elements as a result of it. When the unit senses sufficient water flow, it will automatically activate.

12. CONTROL

Turn the control knob to set your desired temperature. When the set temperature is reached the heater will go to idle and the elements will not draw power.

NOTE: If the controls and display are active, they still draw some power.

Digital Control Temperature Setting

The heater comes with a digital temperature control located in the front panel that can be set from 40°-104°F (4°C-40°C) in one (1) degree increments by a simple turn of the knob.

The heater is turned OFF by pushing the control knob once. Hold the knob for 2-seconds to switch from Fahrenheit to Centigrade.

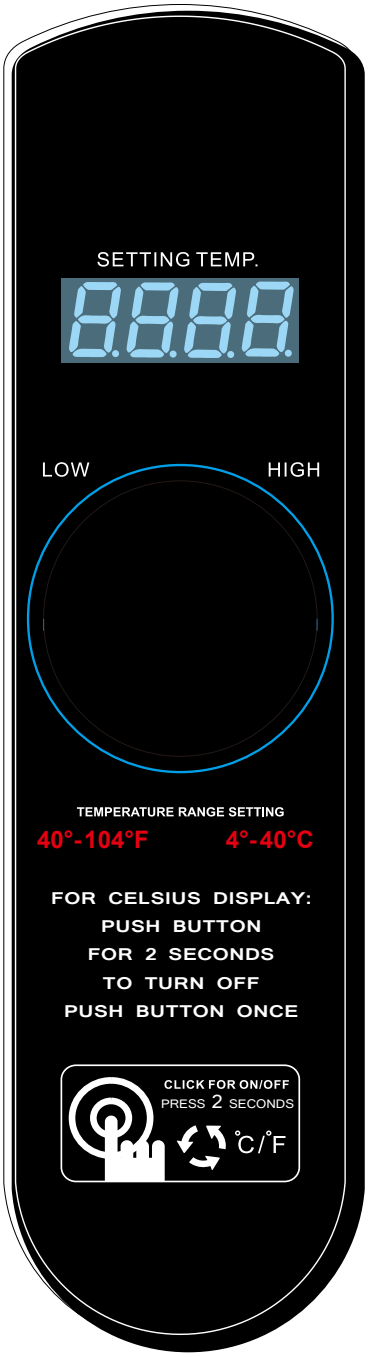


Figure 5. Digital Control for Models ELS 0005-1-TIB and ELS 0011-1-TIB

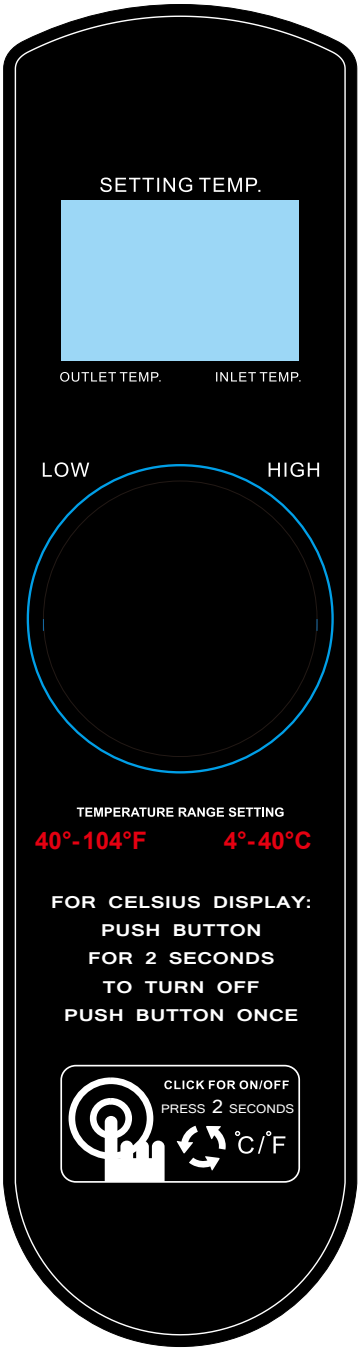


Figure 6. Digital Control for Models ELS 0018-1-TIB and ELS 0027-1-TIB

13. ERROR CODES

For error code information, refer to **Table F** below.

Error Code	Description	Action
E1	Inlet Sensor Fault	Buttons do not function, no heat. Need to replace sensor and restart unit.
E2	Outlet Sensor Fault	Buttons do not function, no heat. Need to replace sensor and restart unit.
E3	Thermostat Fault	Buttons do not function, no heat. Need to reset the thermostat and restart unit.
E5	PCB Fault	Buttons do not function, no heat. Need to replace PCB and restart unit.
E6	Low Water Flow Fault	The heater will resume working if water flow is higher than 14.5 gpm (55 lpm).
E7	Anti-Freeze Protection Fault	Inlet temp is lower than 36°F (2.2°C), and flow rate is lower than 14 gpm (53 lpm). The heater will heat at 1% heating capacity.
E8	Triac Failure Fault	If Triac #1 fails, display shows E8-1; If Triac #2 fails, display shows E8-2; If Triac #3 fails, display shows E8-3. The heater will cut off if any of the Triacs fail, except for 27kW models, heater will continue to operate and heat if any one of the Traic fails, until more Triacs fail.
E9	Low Temp Protection Fault	Inlet temp lower than 32°F (0°C), buttons do not function, heating will completely shut down.
E10	Remote Wiring is In-Use	The heater will not heat until the master control has a call-for-heat.
	Overheat Protection	The heater will stop heating if the water temperature exceeds 120°F (49°C), and resume heating if the water temperature is lower than 104°F (40°C).

Table F. Single-Phase E3T Error Codes

14. REMOTE OPERATION

The heaters are equipped to work with external remote controls. The unit can be connected to either a toggle switch or the switch contacts of a third party remote. The remote works by either making or breaking the circuit created by the remote wiring.

Typically, a remote does not supply power to the heater, it only provides a switching function to turn on/off the heater. If your remote is supplying its own voltage to the heater, it will not work with this heater and may damage the digital circuit board.

Remote Control Wiring

Important installation notes for remote or external wiring configuration.

- Remote wiring must be run in a separate conduit.
- Remote wiring must not be run parallel to high voltage lines.
- For runs of under 30 ft. (9.1 m), remote wiring should have stranded conductors with a minimum of 22 AWG, 600V, cable twisting 1.5" to 2.5" (3.8 cm to 6.4 cm) lay and jacketed.
- For runs over 30 ft. (9.1 m), the conductors should be a minimum of 20 AWG, 600V, cable twisting 1.5" to 2.5" (3.8 cm to 6.4 cm) lay that is shielded and jacketed.
- Maximum cable length is 200 ft. (61 m).

Remote Control (On-Off)

1. Turn on power to the heater.
2. For a remote control **without its own sensor**, set the desired set point, for example 102°F (39°C).
3. For a remote control **with its own sensor**, set the temperature to the highest setting available on the control on the heater. The actual set point will be controlled by the remote control.
4. Turn off and remove power from the heater.
5. On the "Remote Interface Harness", the supplied two wires provide power out to either a toggle switch or the switch contacts of a third party remote.

NOTE: Code E10 is displayed on the heater's digital display when the remote wiring is in use and the master external controller is not calling-for-heat (See Table F). The heater will not heat until the master control is calling-for-heat .

10K Sensor for All Models	
Temp ºF/ºC	Resistance Ω
32 (0)	31537
41 (5)	24783
50 (10)	19587
59 (15)	15568
68 (20)	12443
77 (25)	10000
86 (30)	8080
95 (35)	6563
104 (40)	5359
113 (45)	4398
122 (50)	3628

Table G. Sensor Resistance

Models ELS 0005-1-TIB and ELS 0011-1-TIB	
Heater Features	Standard Values
Element resistance (check with at least one wire lead disconnected from each element).	9.97 to 11.6 Ω
Delay in energizing elements (heater starts heating 1-minute after powering up and sufficient flow is recorded).	60 ± 30 secs.
Turn on flow rate.	15 ± 2 gpm (57 ± 8 lpm)
Individual element current at max temp and max flow.	20.5 to 29.06 A
ECO trip point.	140°F (60°C)
To change temperature setting from Fahrenheit to Celsius.	Press and hold the knob for 3-secs.
To display GPM.	Press and hold the knob for 5-secs.
To display inlet and outlet water temperatures.	On the display GPM screen, turning knob to the left shows inlet water temperature and turning it to the left shows outlet water temperature.

Models ELS 0018-1-TIB and ELS 0027-1-TIB	
Heater Features	Standard Values
Element resistance (check with at least one wire lead disconnected from each element).	6.10 to 7.11 Ω
Delay in energizing elements (heater starts heating 1-minute after powering up and sufficient flow is recorded).	60 ± 30-secs.
Turn on flow rate.	15 ± 2 gpm (57 ± 8 lpm)
Individual element current at max temp and max flow.	31.7 to 40.2 A
ECO trip point.	140°F (60°C)
To change temperature setting from Fahrenheit to Celsius.	Press and hold the knob for 3-secs.
To display GPM.	Press and hold the knob for 5-secs.
Inlet and outlet water temperatures.	The inlet and outlet temperatures are displayed at all times.

Table H. E3T Electric Heater Features

15. TROUBLESHOOTING

Problem	Cause	Solution
Nothing happens when the thermostat is turned on.	Low flow	1. Check filter, skimmer basket, pump. 2. If a 2-speed pump is used, turn to high speed. 3. Press and hold the knob for 5-seconds. Make sure the flow rate displayed on screen is at least 15 gpm (57 lpm).
	High limit has tripped	Push the reset button on the limit.
	Thermostat not calling for heat	Turn thermostat to higher temperature.
It takes a long time to heat the spa.	Low input voltage	Call an electrician.
	Undersized heater	Calculate temperature in heat rise °/hr. = Heater input (kw) x 410 divided by spa gallonage (This does not take into account heat loss due to weather).
	Heat loss from poor weather conditions (cold, high winds)	Use a spa cover.
	Defective heating element	Call an electrician.
Spa does not reach temperature.	Low flow	Check filter, skimmer basket, pump.
Heating element continuously burning out.	High input voltage	Call an electrician.
	Poor water chemistry	See "WATER CHEMISTRY" on page 5.
	Heating element split open	Over-acid condition. Watch pH, add acid slowly.
Fuses blow or circuit breaker opens.	Shorted heating elements	Replace element.
	Undersized wire	Replace field-wiring.

Table I. E3T Troubleshooting

16. WIRING DIAGRAMS

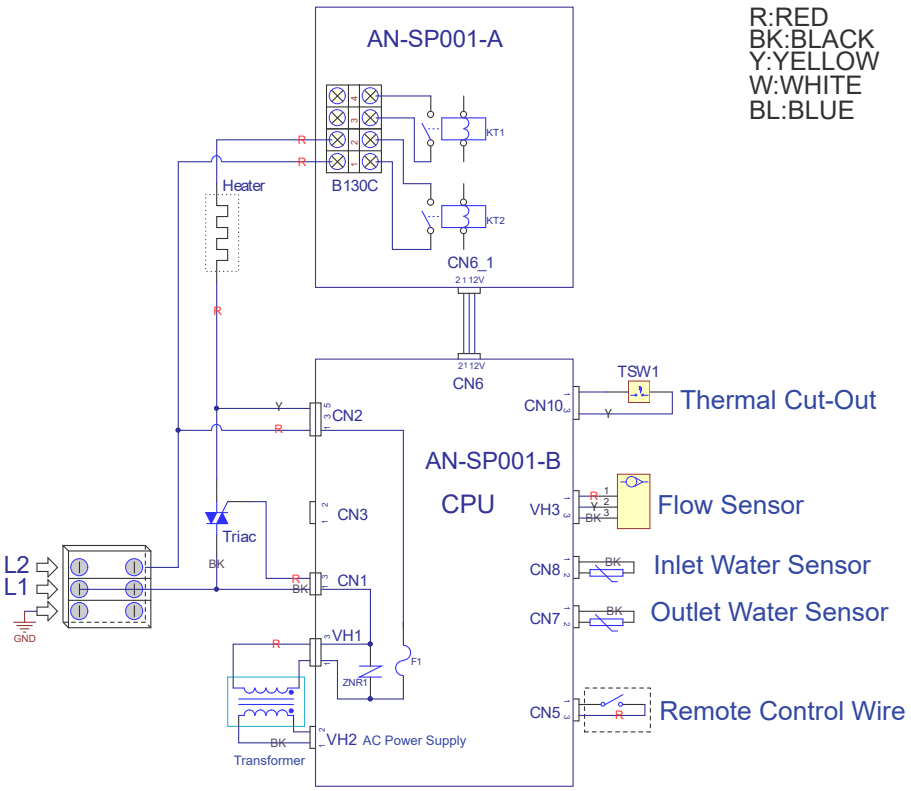


Figure 7. Wiring Diagram for 5.5KW Spa Heater

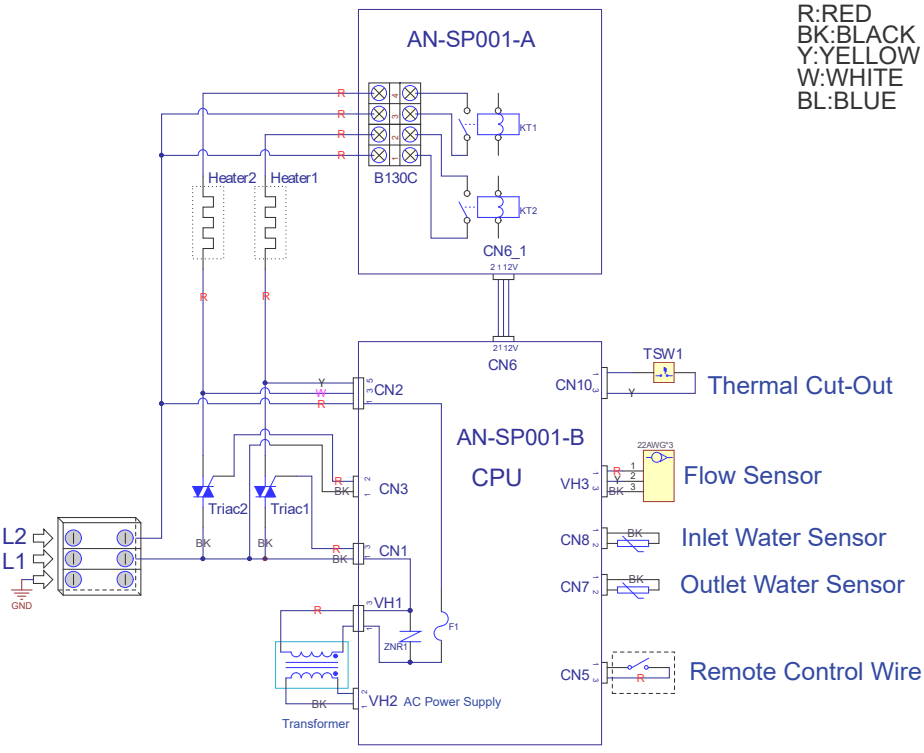


Figure 8. Wiring Diagram for 11KW Spa Heater

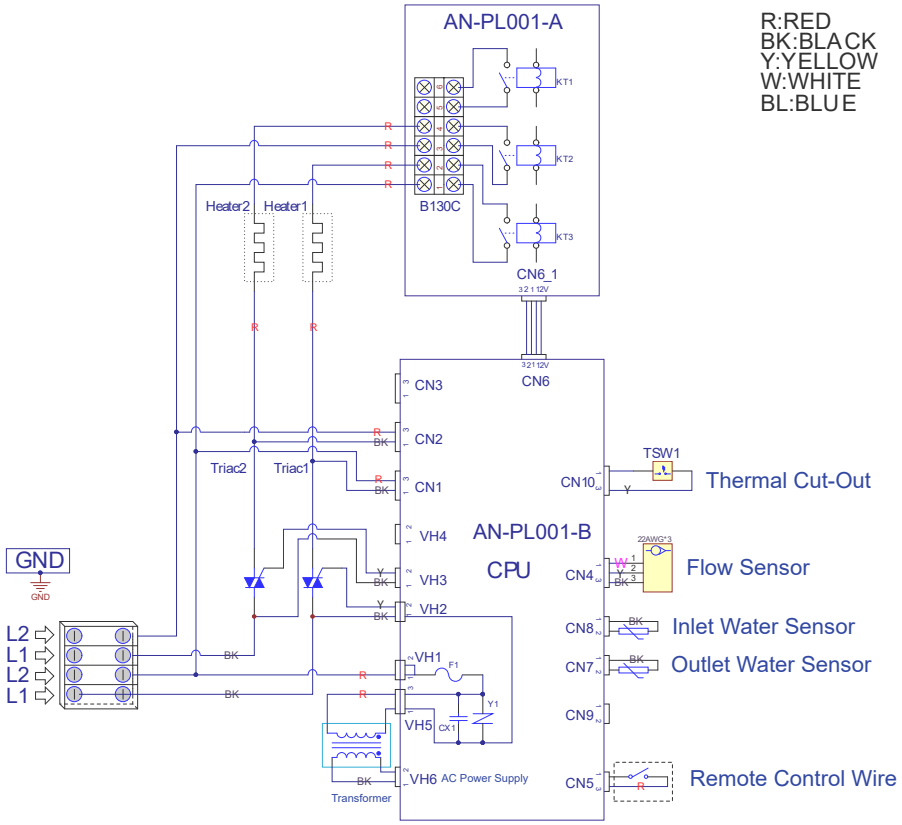


Figure 9. Wiring Diagram for 18KW Pool Heater

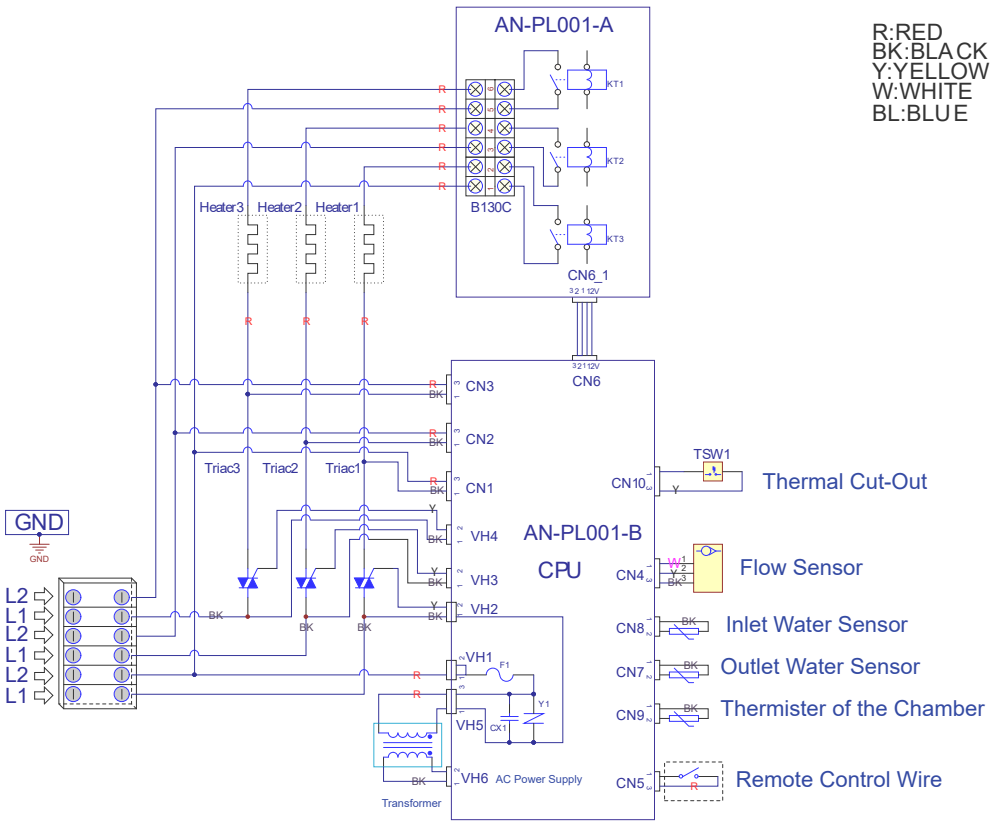
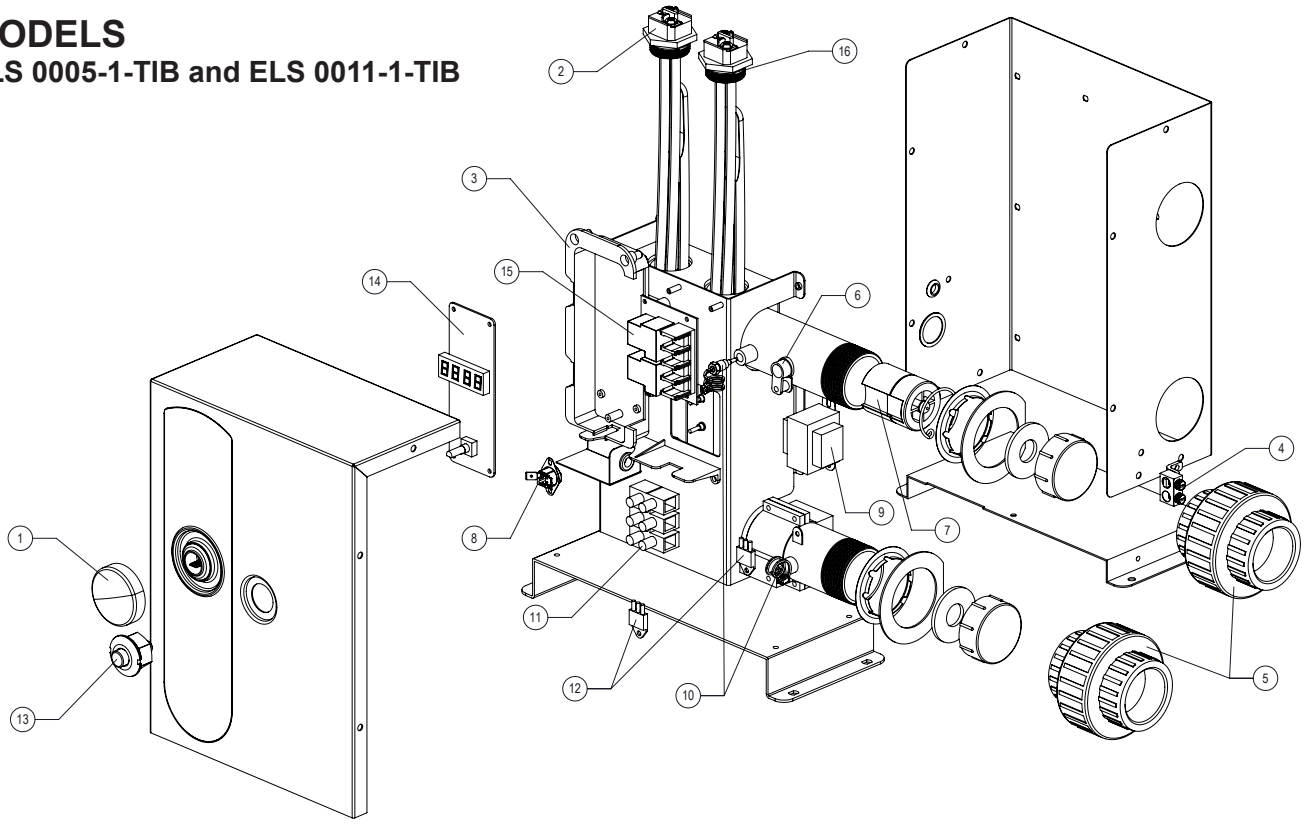


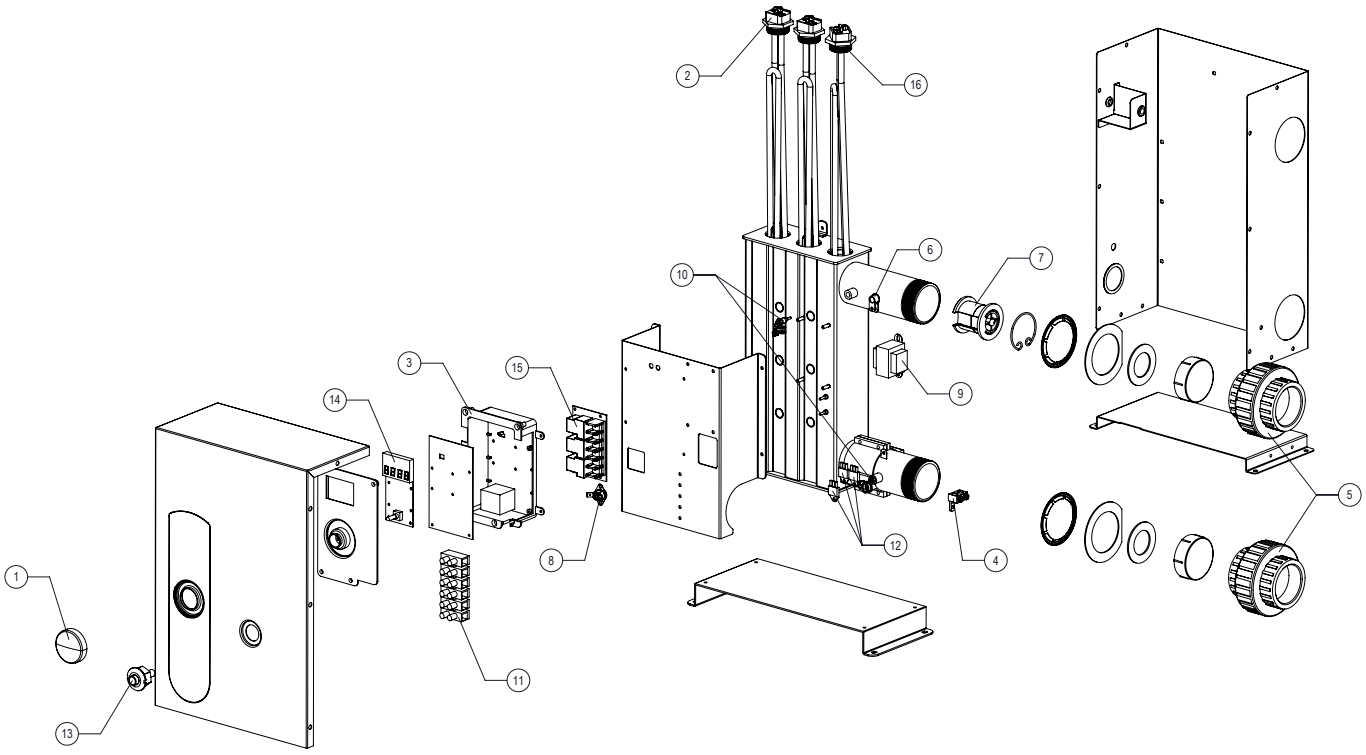
Figure 10. Wiring Diagram for 27KW Pool Heater

17. ILLUSTRATED PARTS LIST

MODELS
ELS 0005-1-TIB and ELS 0011-1-TIB



MODELS
ELS 0018-1-TIB and ELS 0027-1-TIB



CALL OUT	PART DESCRIPTION	ELS 0005-1-TIB	ELS 0011-1-TIB	ELS 0018-1-TIB	ELS 0027-1-TIB
1	Knob	017154F	017154F	017154F	017154F
2	Heating Element (O-ring Included) 5.5KW 240V	017139F	017139F	N/A	N/A
2	Heating Element (O-ring Included) 9KW 240V	N/A	N/A	017140F	017140F
3	Enclosure-PC Board	017147F	017147F	N/A	N/A
3	Enclosure-PC Board	N/A	N/A	017159F	017159F
4	Grounding Terminal	017148F	017148F	017148F	017148F
5	Union-1-1/2" NPT X 1-1/2" C PVC	017179F	017179F	N/A	N/A
5	Union-2" NPT X 2" C PVC	N/A	N/A	017180F	017180F
6	Hall Effect Sensor	017150F	017150F	N/A	N/A
6	Hall Effect Sensor	N/A	N/A	017151F	017151F
7	Flow Sensor	017155F	017155F	N/A	N/A
7	Flow Sensor	N/A	N/A	017156F	017155F
8	High Limit Manual-Reset	100-10003171	100-10003171	100-10003171	100-10003171
9	Transformer AC 220V 50Hz	100-10003172	100-10003172	100-10003172	100-10003172
10	Inlet & Outlet Thermistor (Includes O-ring)	100-10003173	100-10003173	100-10003173	100-10003173
11	Terminal Block PA18H-3P	100-10003174	100-10003174	N/A	N/A
11	Terminal Block PA18H-6P	N/A	N/A	100-10003175	100-10003175
12	Triac 3-Wire	100-10003176	100-10003168	100-10003169	100-10003170
13	Push Button	100-10003177	100-10003177	100-10003178	100-10003178
14	Circuit Board with LED Display	100-10003179	100-10003179	100-10003180	100-10003180
15	Relay	100-10003181	100-10003182	100-10003183	100-10003184
16	O-Rings	017157F	017157F	017157F	017157F
17	Pipe Plug (Includes O-Ring) (Not Shown)	017158F	017158F	N/A	N/A

If you need information for an older model heater, go to the Raypak website's model number history: https://www.raypak.com/technical-resources/documents/ link; or contact your Raypak representative for assistance.

Find a Raypak representative for Commercial or Pool product: https://www.raypak.com/commercial-sales-rep/ or https://www.raypak.com/pool-heater-sales-rep/.

NOTES