



# **Pool & Spa Heat Pumps**

**Models XE, XR and MAX XL**

**Installation, Operation and Care Manual**

# Comfort Wave® Pool & Spa Heat Pump

## Installation, Operation & Care Manual

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# SECTION A — INSTALLER INFORMATION

## A1. Safety Notices & Installer Responsibility

This equipment must be installed and serviced by qualified personnel only. Installation must comply with all applicable local, state, and national electrical and mechanical codes. Failure to follow these instructions may result in equipment damage, personal injury, or voided warranty.

Disconnect and lock out electrical power before servicing. The installer is responsible for verifying correct site conditions, electrical supply, and hydraulic compatibility prior to startup.

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## A2. Equipment Overview & Heating Principles

The Comfort Wave® Pool & Spa Heat Pump is a high-efficiency, air-source heating system designed to transfer thermal energy from ambient air into circulating pool or spa water. Heating capacity is influenced by outdoor air temperature, humidity, water temperature, and flow rate.

Rated performance conditions for air-source heat pumps are:

- 80°F ambient air temperature
  - 80% relative humidity
  - 80°F water temperature
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## A3. Site Selection & Clearance Requirements

Outdoor installation only. Do not install indoors or in enclosed spaces.

Installation location must:

- Be protected from roof runoff and irrigation spray
- Allow unrestricted airflow
- Prevent direct glare on the control display

Minimum clearances:

- Top discharge: 48 inches
- All sides: 6 inches
- Control panel access: 24 inches

Follow any greater clearance requirements mandated by local codes.

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## **A4. Equipment Pad, Condensation & Securing**

Install the unit on a level concrete or manufactured equipment pad. The pad should be slightly sloped to direct condensation away from structures. Normal operation may produce 3–5 gallons of condensate per hour depending on humidity.

Isolate the pad from building foundations to reduce vibration transfer. Where required by code, secure the unit using approved tie-down hardware.

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## **A5. Plumbing Installation**

The heat pump is supplied with 2-inch PVC unions. Use rigid PVC piping only.

Recommended plumbing sequence:

Pump → Filter → Heat Pump → Sanitizer → Pool

Chlorinators and chemical feeders must be installed downstream of the heater. Verify inlet and outlet orientation prior to operation. Pressure test and inspect all connections for leaks.

### **Flow Rate Specifications**

- XE / XR Models: 20–70 GPM
- XL Models: 30–70 GPM

A plumbing bypass is required for systems exceeding 70 GPM. Multiple heaters must be installed in parallel with a minimum spacing of 12 inches.

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## **A6. Electrical Installation & Bonding**

All electrical work must be performed by a licensed electrician.

- Verify voltage and breaker size using the unit data plate
- Copper conductors only
- Conduit must enter through the base of the unit

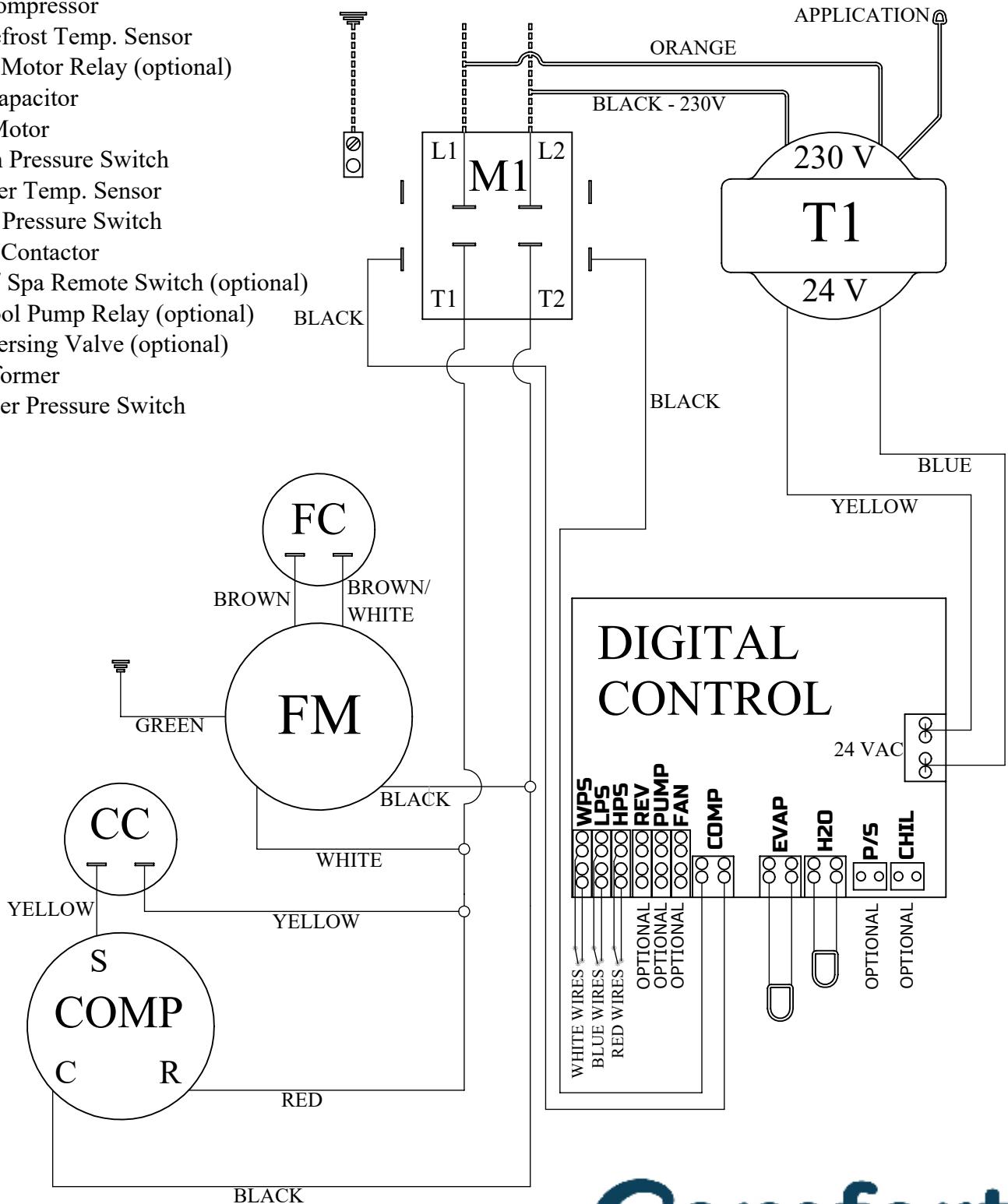
## Wiring Diagram Legend

CC...Compressor Capacitor  
 CHIL...Remote Chiller (optional)  
 COMP...Compressor  
 EVAP...Defrost Temp. Sensor  
 FAN...Fan Motor Relay (optional)  
 FC...Fan Capacitor  
 FM...Fan Motor  
 HPS...High Pressure Switch  
 H2O...Water Temp. Sensor  
 LPS...Low Pressure Switch  
 M1...Main Contactor  
 P/S...Pool / Spa Remote Switch (optional)  
 PUMP...Pool Pump Relay (optional)  
 REV...Reversing Valve (optional)  
 T1...Transformer  
 WPS...Water Pressure Switch

## HIGH VOLTAGE FIELD CONNECTION

208-230 / 1 / 60  
220-240 / 1 / 50

RED WIRE  
USE FOR 208 V  
APPLICATION



**Comfort**  
**wave**  
Products LLC

## **Bonding**

Bond all metallic pool equipment using a minimum 8 AWG solid copper conductor. Connect to the internal bonding lug provided. Older installations without bonding grids may require a grounding rod installed near the equipment.

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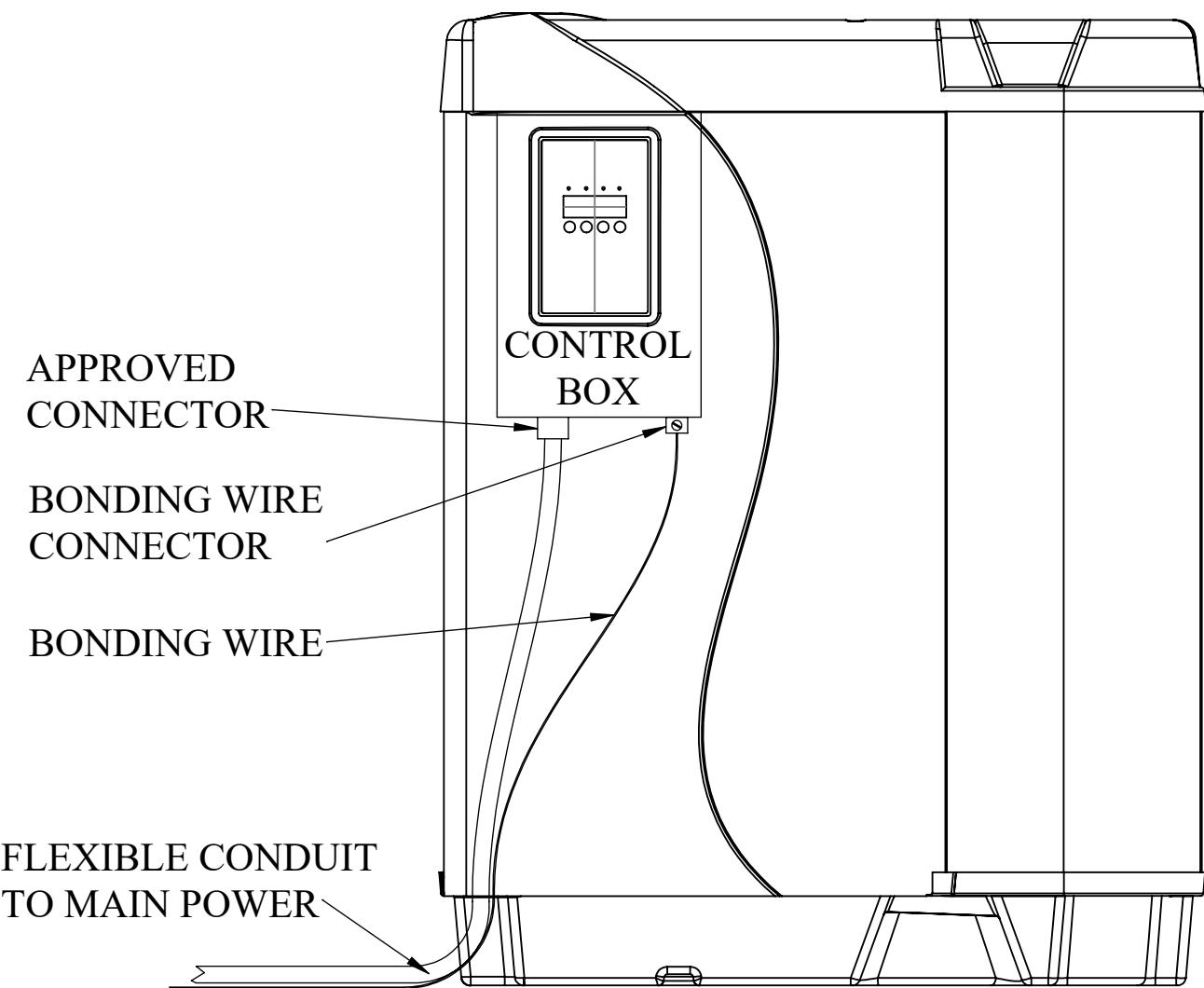
## **A7. Initial Commissioning (Installer Startup)**

1. Confirm proper water circulation
  2. Verify correct electrical supply
  3. Set operating mode and temperature
  4. Allow compressor time-delay to expire
  5. Confirm heating operation and inspect for leaks or abnormal noise
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## **A8. External Control Integration**

The heater supports pool automation systems, remote thermostats, and 3-wire control interfaces. Wiring must be performed in accordance with provided schematics. Improper wiring may damage the control system.

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# SECTION B — OWNER / USER INFORMATION

## B1. Owner Safety & Product Records

This unit contains no user-serviceable components. Do not open access panels.

Record the following information for warranty reference:

- Model Number
- Serial Number
- Purchase Date
- Dealer Information

Retain this manual and proof of purchase for the life of the product.

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## B2. How Your Heat Pump Works

Your heat pump warms pool or spa water by capturing heat from the surrounding air and transferring it into the water. Because it relies on ambient air energy, heating occurs gradually and is most effective in warmer, humid conditions.

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## B3. Performance Expectations & Energy Efficiency Tips

Under ideal conditions, the heat pump may raise water temperature approximately 1°F per hour. Heat pumps are designed to maintain temperature rather than rapidly heat water.

For best efficiency:

- Operate the heater during warmer daytime hours
- Maintain a consistent temperature set point
- Use a pool cover to reduce heat loss

Operating the heater below 45°F ambient air temperature is not recommended.

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## B4. Control Panel & Operation

### Power On / Off

Use the SET button and arrow keys to turn the unit on or off. Indicator lights confirm operational status.

### Pool & Spa Modes

Separate temperature settings may be stored for pool and spa operation.

### Temperature Display

The display is factory set to Fahrenheit. The screen automatically returns to current water temperature after adjustments.

### Keypad Lockout

A programmable two-digit code may be enabled to prevent unauthorized changes.

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## B5. Normal Operating Behavior

- Long run times are normal
  - Cool air discharge indicates heat transfer
  - Condensation from the base is normal
  - Initial heating may take 24–48 hours
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## B6. Defrost Operation

When ambient temperatures fall below approximately 48°F, the system will automatically enter defrost mode. Heating resumes once conditions improve.

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## B7. Routine Maintenance & Care

Keep airflow paths clear of debris and vegetation. Rinse the evaporator coil periodically, especially in coastal environments. Clean the cabinet using water only. Do not use solvents or chemical cleaners.

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## **B8. Cold Weather Protection (Winterization)**

In freezing climates:

- Drain all internal water
- Disconnect plumbing unions
- Protect exposed piping

Freeze damage is not covered under warranty.

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## **B9. Basic Troubleshooting**

Normal heating indicators include:

- Cool air discharge
- Condensation
- Water returning warmer than supply

If performance issues persist, contact an authorized service provider.

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## **B10. Authorized Service & Warranty Support**

All service must be performed by an authorized Comfort Wave service provider. Unauthorized repairs may void manufacturer's and labor warranty coverage.

Before requesting service, have the model number, serial number, and proof of purchase available.

For service assistance, contact:

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