Taco Comfort Solutions ES2 15-60/130mm

Taco Comfort Solutions ES2 15-60/130mm High-Efficiency Heat Pump Instruction Manual

1. Introduction and Overview

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Taco Comfort Solutions ES2 15-60/130mm high-efficiency heat pump. The ES2 series is designed for heating systems, offering a compact form factor and advanced control features to optimize energy consumption.

2. Safety Information

Important: Read all safety instructions before installation or operation. Failure to follow these instructions may result in property damage, injury, or death.

- Always disconnect the power supply before performing any installation, maintenance, or service on the pump.
- Installation and electrical connections must be performed by qualified and authorized personnel in accordance with local codes and regulations.
- Ensure proper grounding of the unit to prevent electrical shock.
- Do not operate the pump with flammable, aggressive, or explosive liquids.
- The pump is designed for heating water according to VDI 2035 and water-glycol mixtures with glycol content below 30%.
- Protect the pump from freezing temperatures.

3. Product Features

The Taco ES2 15-60/130mm heat pump incorporates several features for enhanced performance and reliability:

- **Compact Design:** Maximized performance within a minimal footprint.
- **Automatic Air Identification:** The system automatically detects air within the facility. An error notification is signaled by a white LED flashing light.

- **Energy Efficiency:** Pre-configured for optimal energy savings.
- **Versatile Operation Modes:** Supports variable pressure curves (P1, P2), constant differential pressure curves (CI, CII), min-max operation mode, and fixed speed.
- **Quality Construction:** Utilizes first-class technology for durability.

4. Technical Specifications

Specification	Value
Model	ES2 15-60/130mm
Mains Voltage	1 x 230 V (±10%)
Frequency	50/60 Hz
Electrical Connection	Cable screw PG11
Energy Efficiency Index (EEI)	≤ 0.20 (Part 2)
Rated Power (P1)	Min. 3 W, Max. 42 W
Rated Current (I1)	Min. 0.03 A, Max. 0.33 A
Insulation Class	H
Protection Grade	IP44
Unit Grade	II
Connection	G1
Permissible Liquid Temperature	From +2 °C to +95 °C
Operating Pressure	Max. 0.6 MPa (6 bar)
Materials	Aluminum, Plastic
Dimensions (Package)	19.2 x 15.1 x 13.4 cm
Weight (Item)	1.67 kg (3.68 Pounds)

5. Installation (Setup)

Proper installation is crucial for the pump's performance and longevity. Refer to the diagram below for component identification.



Figure 1: Taco ES2 15-60/130mm High-Efficiency Heat Pump. The image displays the black pump unit with the Taco Comfort Solutions logo, an ES2 model designation, and 'INVERTER TECH' branding. A central rotary dial is visible with 'min' and 'max' markings, along with symbols for different operating modes (P, C, 1, 2). A white LED indicator is present next to the ES2 label. The unit also features 'TSSST' and 'MADE IN ITALY' labels, and threaded pipe connections at the top and bottom.

1. **Mounting:** Securely mount the pump in the designated position within the heating system. Ensure adequate space for ventilation and access.
2. **Piping Connections:** Connect the pump to the heating system piping using the G1 connections. Ensure all connections are watertight.
3. **Electrical Connections:**
    - Ensure the main power supply is disconnected.
    - Connect the electrical cable to the pump's PG11 cable screw terminal.

- Verify that the power supply matches the pump's requirements (1 x 230 V, 50/60 Hz).
- Ensure proper grounding.

4. **System Filling and Venting:** After installation, fill the heating system with the appropriate fluid and thoroughly vent all air from the system, including the pump.

6. Operation

The Taco ES2 pump offers various operating modes selectable via the rotary dial on the front panel (refer to Figure 1).

1. **Mode Selection:** Rotate the dial to select the desired operating mode. The available modes typically include:
    - **Variable Pressure Curves (P1, P2):** Adjusts pump performance based on system demand, suitable for systems with varying flow requirements.
    - **Constant Differential Pressure Curves (CI, CII):** Maintains a constant pressure difference across the pump, ideal for systems with stable flow.
    - **Min-Max Operation Mode:** Allows setting minimum and maximum performance limits.
    - **Fixed Speed:** Operates the pump at a constant speed.
2. **Automatic Air Identification:** The pump features an automatic air identification routine. If air is detected in the system, a white LED will flash, indicating the process. The pump will attempt to clear the air automatically.
3. **Power On/Off:** The pump will begin operation once power is supplied and a mode is selected.

7. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your Taco ES2 heat pump.

- **System Fluid Quality:** Ensure the heating system fluid adheres to VDI 2035 standards. If using glycol mixtures, the glycol content must remain below 30%.
- **Leak Inspection:** Periodically inspect all connections and the pump body for any signs of leaks. Address any leaks immediately.
- **Cleanliness:** Keep the pump exterior clean and free from dust or debris to ensure proper heat dissipation.
- **Professional Inspection:** It is recommended to have the heating system, including the pump, inspected by a qualified professional annually.

8. Troubleshooting

This section provides guidance for common issues. For complex problems, contact a qualified service technician.

Problem	Possible Cause	Solution
White LED flashing	Automatic air identification in progress or system error.	Allow the pump to complete its air identification routine. If flashing persists or indicates an error, consult a professional.
Pump does not start	No power supply, incorrect wiring, or pump blockage.	Check power connections and circuit breaker. Verify wiring. Inspect for blockages.

Problem	Possible Cause	Solution
Insufficient flow/heating	Air in the system, incorrect operating mode, or system blockage.	Vent the heating system. Select an appropriate operating mode. Check for blockages in pipes or pump.
Unusual noise/vibration	Air in the pump, cavitation, or mechanical issue.	Ensure system is properly vented. Check system pressure. If noise persists, contact a service technician.

9. Warranty and Support

The Taco Comfort Solutions ES2 15-60/130mm high-efficiency heat pump is backed by a **5-year Taco Warranty**. For warranty claims, technical support, or service inquiries, please contact Taco Comfort Solutions directly or your authorized dealer. Ensure you have your product model number and purchase date available when contacting support.

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