

ERC-2

Paragon ERC-2 Electronic Refrigeration Control User Manual

Model: ERC-2

1. INTRODUCTION

The Paragon ERC-2 is a sophisticated microprocessor-based controller designed to efficiently manage temperature and defrost functions in commercial refrigeration equipment. This single device integrates the functionalities of multiple traditional controls, including the case thermostat, defrost timer, defrost termination switch, and fan delay switch, while also providing a thermometer function.

Equipped with two NSF approved temperature sensors for both the case and evaporator, the ERC-2 ensures precise monitoring. It features four powerful relay outputs dedicated to the compressor, fan, defrost, and alarm systems. Its versatile design supports selectable line voltage input power (120/208/240VAC at 50/60Hz), making it compatible with a wide range of refrigeration systems.



Figure 1: Top-front view of the Paragon ERC-2 Electronic Refrigeration Control unit.

2. SAFETY INFORMATION

WARNING: Installation and servicing of this equipment should only be performed by qualified personnel. Disconnect all power before installing or servicing the control. Failure to do so may result in property damage, serious injury, or death.

Always adhere to local electrical codes and regulations. Ensure proper grounding and wiring to prevent electrical hazards.

3. INSTALLATION AND SETUP

3.1 Mounting the Control

The ERC-2 is housed in a NEMA 1 case, suitable for indoor use. Select a mounting location that is easily accessible for wiring and viewing the remote display, away from excessive heat, moisture, or vibration.

1. Securely mount the control unit using appropriate fasteners through the designated mounting holes.
2. Ensure adequate clearance around the unit for ventilation and access to wiring compartments.



Figure 2: Side view of the ERC-2 unit, showing mounting points and conduit knockouts.

3.2 Electrical Wiring

All wiring must comply with national and local electrical codes. Refer to the wiring diagram provided with the unit for specific connections. The ERC-2 supports selectable line voltage input (120/208/240VAC).

- Connect the main power supply to the designated terminals.
- Wire the compressor, fan, and defrost components to their respective relay outputs.
- Connect the two NSF approved temperature sensors to the case and evaporator locations as required.
- Connect the remote display unit to the control according to the wiring diagram.



Figure 3: Angled view of the ERC-2 unit, highlighting the NEMA 1 case design.

3.3 Initial Power-Up and Configuration

After all wiring is complete and verified, apply power to the unit. The remote display will illuminate. Follow the on-screen prompts or refer to the detailed programming guide (not included in this manual) to set initial parameters such as desired temperature, defrost cycles, and alarm thresholds.

4. OPERATION

The ERC-2 operates automatically once configured. The remote display provides real-time temperature readings and operational status. Users can typically view current temperatures, defrost status, and alarm conditions.

4.1 Remote Display Functions

The remote display allows for monitoring and, depending on the model's specific features, adjustment of certain parameters. Common functions include:

- **Temperature Display:** Shows current case and evaporator temperatures.
- **Status Indicators:** Lights or symbols indicating compressor run, fan operation, defrost cycle, and alarm status.
- **Parameter Adjustment:** Accessing menus to modify setpoints, differentials, and defrost settings (requires specific button presses, refer to the full programming manual).

4.2 Defrost Cycles

The ERC-2 manages defrost cycles automatically based on programmed settings. These settings typically include defrost frequency, duration, and termination methods (e.g., temperature-based termination via the defrost termination switch function).

5. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of the ERC-2 control unit.

- **Cleaning:** Periodically clean the exterior of the control unit and remote display with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Connections:** Annually inspect all electrical connections for tightness and signs of corrosion. Ensure sensor wires are intact and properly seated.
- **Sensor Integrity:** Verify that temperature sensors are securely mounted and free from damage.
- **Software Updates:** Consult the manufacturer's website or technical support for information on potential firmware updates.

Always disconnect power to the unit before performing any maintenance.

6. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No power to unit/display blank	No main power; Blown fuse/tripped breaker; Loose wiring connection.	Check power supply; Inspect fuse/breaker; Verify all wiring connections.
Incorrect temperature reading	Faulty sensor; Sensor improperly placed; Loose sensor connection.	Check sensor placement; Inspect sensor wiring; Replace faulty sensor if necessary.
Compressor not running	Temperature setpoint not met; Compressor relay fault; External compressor issue.	Verify setpoint; Check relay status; Consult refrigeration technician for compressor diagnosis.
Defrost not initiating/terminating	Incorrect defrost settings; Defrost sensor fault; Defrost heater issue.	Review defrost parameters; Check defrost sensor; Inspect defrost heater and wiring.

7. SPECIFICATIONS

The following specifications apply to the Paragon ERC-2 Electronic Refrigeration Control:

- **Model:** ERC-2
- **Type:** Microprocessor-based Electronic Refrigeration Control
- **Case:** NEMA 1
- **Display Type:** LCD or LED (Remote Display)
- **Input Voltage:** Selectable 120/208/240VAC, 50/60Hz
- **Outputs:** 4 Relay Outputs (Compressor, Fan, Defrost, Alarm)
- **Sensors:** 2 NSF Approved Temperature Sensors (Case, Evaporator)
- **Functions Replaced:** Case thermostat, defrost timer, defrost termination switch, fan delay switch, thermometer.
- **Color:** Gray
- **ASIN:** B093C9PW5P

