Johnson Controls P72DA-1C

Johnson Controls P72DA-1C Penn Series P72 Standard Electromechanical Pressure Control

User Manual

1. Introduction

The Johnson Controls P72DA-1C Penn Series P72 Electromechanical Pressure Control is designed for high-pressure applications, primarily serving as a high-pressure cut-out control, head-pressure control, and for condenser fan cycling in commercial refrigeration and air conditioning systems. This control is compatible with most common refrigerants and can also be utilized in other non-corrosive fluid applications. Ammonia-compatible models are also available.

Key features of the P72DA-1C include:

- **All-steel case and cover:** Provides long-lasting, rugged protection for internal components, ensuring durability in demanding environments.
- **Sight-set calibrated pressure adjustment:** Allows for visible pressure scale adjustment, fully adjustable through the range without removing the cover (on NEMA 1 enclosure models), simplifying setup.
- **Manual reset lockout option:** Features a trip-free lockout that prevents overriding or resetting until pressure returns to the specified safe level, enhancing system safety.
- **Variety of pressure connection styles:** Offers greater flexibility during mounting and when adapting pressure connections to various field application requirements.

The P72DA-1C model provides direct control of 208-240 volt single-phase motors up to 3 horsepower, and 208-220 volt 3-phase motors up to 5 horsepower.

2. Product Overview

Figure 2.1: Front view of the P72DA-1C pressure control unit, displaying the pressure adjustment scale and the manual reset button.

Figure 2.2: Packaging for the Johnson Controls P72DA-1C, indicating the model number and basic specifications.

The P72DA-1C is an electromechanical pressure control featuring a durable all-steel case. It includes a visible pressure scale for easy adjustment and a manual reset lockout mechanism for safety. The unit is designed for

robust performance in industrial and commercial HVAC applications.

3. Safety Information

Always adhere to local and national electrical codes and regulations when installing and servicing this device. Failure to do so may result in property damage, personal injury, or death.

- Disconnect all power to the system before installation or servicing to prevent electrical shock.
- Ensure proper grounding of the control unit.
- Do not exceed the specified electrical ratings of the control.
- Verify that the pressure range of the control matches the system requirements.
- Only qualified personnel should install, operate, and maintain this equipment.

4. Installation

4.1 Mounting

1. Select a mounting location that is free from excessive vibration, moisture, and extreme temperatures.
2. Mount the control securely using appropriate fasteners. The unit can be wall-mounted.
3. Ensure adequate clearance for wiring and pressure line connections, as well as for accessing the adjustment and reset mechanisms.

4.2 Electrical Wiring

1. Turn off all power to the system at the main disconnect.
2. Remove the control cover to access the wiring terminals.
3. Connect the power supply and load wires to the appropriate DPST (Double Pole, Single Throw) terminals as per the system's electrical schematic. Refer to the wiring diagram provided with the product for specific connections.
4. Ensure all connections are tight and secure.
5. Replace the control cover.

4.3 Pressure Connection

1. Connect the 36-inch capillary tube with the 1/4-inch flare nut to the system's high-pressure line.
2. Use appropriate tools to tighten the flare nut, ensuring a leak-free connection. Do not overtighten.
3. Verify that the capillary tube is routed to avoid kinks or sharp bends that could impede pressure transmission.

5. Operation

5.1 Setting Pressure

1. With the system powered off, remove the control cover (if applicable for your model) to access the sight-set calibrated pressure adjustment.
2. Rotate the adjustment screw or knob to set the desired high-pressure cut-out point. The visible scale will indicate the set pressure.
3. Ensure the set point is within the operating range of 50-500 psi and appropriate for your system's design.
4. Replace the control cover.

5.2 Manual Reset Lockout

The P72DA-1C features a manual reset lockout. If the system pressure exceeds the set high-pressure cut-out point,

the control will trip and lock out, interrupting the circuit. To reset the control:

1. Identify and rectify the cause of the high-pressure condition.
2. Ensure the system pressure has returned to a safe operating level, below the lockout threshold.
3. Press the