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Johnson Controls P70NA-1C

Johnson Controls P70NA-1C Dual Pressure Control User Manual

Model: P70NA-1C

1. Introduction

The Johnson Controls P70NA-1C Dual Pressure Control is designed primarily for use as a combination high and low pressure control in commercial refrigeration and air conditioning applications. This control responds directly to system pressure changes on both high and low sides, providing single-device control of the compressor. It is compatible with most common refrigerants and is available in various pressure ranges. The P70NA-1C ensures precise and reliable pressure management within HVAC systems.

2. Product Features

- **Durable Construction:** All-steel case and cover built to provide long-lasting, rugged protection for internal components.
- **Sight-Set Calibrated Pressure Adjustment:** Displays a visible pressure scale, fully adjustable through the range without removing the cover (on NEMA 1 enclosure models).
- **MICRO-SET Differential Option:** Allows for precise control on low pressure applications.
- **Independent High and Low Pressure Switches:** Satisfies a variety of dual pressure application wiring requirements with a single versatile control (P70S and P170S Models).
- **Convertible High Pressure Reset:** Auto reset or manual reset lockout (P70S and P170S Models) reduces inventory—one control can be adapted to several dual pressure applications in the field.

3. Setup and Installation

Proper installation is crucial for the optimal performance and longevity of the P70NA-1C Dual Pressure Control. Always ensure power is disconnected before beginning installation.

3.1 Mounting the Control

Mount the control in a location that is easily accessible for adjustments and maintenance, and where it is protected from physical damage and excessive vibration. Use appropriate fasteners to secure the control firmly to a stable surface.

3.2 Pressure Line Connections

Connect the high-pressure sensing line to the high-pressure port and the low-pressure sensing line to the low-pressure port. Ensure all connections are tight and leak-free. Use appropriate fittings and sealing compounds as required by local codes and industry standards.

3.3 Electrical Wiring

Refer to the wiring diagram provided with the unit for correct electrical connections. Ensure all wiring complies with local electrical codes and regulations. Connect the control to the compressor and power supply as indicated. Verify proper grounding.



Figure 1: Johnson Controls P70NA-1C Dual Pressure Control. This image shows the main unit with its gray housing, featuring two pressure gauges on the front panel. Two coiled copper capillary tubes with brass fittings extend from the bottom, designed for connection to high and low pressure lines in a refrigeration or air conditioning system.

4. Operating Instructions

Once installed and wired, the P70NA-1C control operates automatically based on the set pressure points. Adjustments should only be made by qualified personnel.

4.1 Setting Pressure Points

To adjust the high and low pressure cut-out points, use the adjustment screws located behind the front cover (if applicable, refer to specific model instructions). The sight-set calibrated pressure adjustment allows for visible setting of the pressure scale. Ensure the system is stable before making final adjustments.

4.2 Monitoring Operation

Regularly monitor the system's pressure readings to ensure they remain within the desired operating range. The control will automatically cycle the compressor based on the set high and low pressure limits to maintain system integrity and efficiency.

5. Maintenance

The Johnson Controls P70NA-1C is designed for minimal maintenance. However, periodic checks can help ensure its continued reliable operation.

- **Visual Inspection:** Periodically inspect the control for any signs of physical damage, corrosion, or loose connections.
- **Pressure Line Integrity:** Check pressure lines and fittings for leaks or damage. Repair or replace as necessary.
- **Electrical Connections:** Ensure all electrical connections are secure and free from corrosion.
- **Calibration Check:** If system performance issues arise, verify the pressure settings and recalibrate if needed by a qualified technician.

6. Troubleshooting

This section provides guidance for common issues. For complex problems, consult a qualified HVAC technician.

Problem	Possible Cause	Solution
Control not cycling compressor	Incorrect pressure settings; Electrical fault; Sensor issue	Verify pressure settings; Check wiring and power supply; Inspect pressure sensors for damage.
Compressor short cycling	Differential setting too narrow; Refrigerant charge issue; System blockage	Adjust differential setting; Check refrigerant levels; Inspect system for blockages.
High pressure lockout	Condenser coil dirty; Fan motor failure; Overcharge of refrigerant	Clean condenser coil; Check condenser fan operation; Verify refrigerant charge.
Low pressure lockout	Low refrigerant charge; Evaporator coil iced; Expansion valve issue	Check for refrigerant leaks and recharge; Defrost evaporator coil; Inspect expansion valve.

7. Specifications

Attribute	Detail
Model Number	P70NA-1C
Brand	Johnson Controls

Attribute	Detail
Package Dimensions	17.24 x 9.41 x 2.68 inches
Item Weight	3.02 Pounds
Manufacturer	Johnson Controls Inc
First Available Date	December 5, 2017

8. Warranty and Support

Johnson Controls products are manufactured to high-quality standards. For specific warranty information, please refer to the warranty card included with your product or visit the official Johnson Controls website. For technical support or service inquiries, please contact Johnson Controls customer service or an authorized service provider.
Note: Unauthorized modifications or repairs may void the product warranty.

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