Danfoss Akvh 10-5

Danfoss Electric Expansion Valve Akvh 10-5 User Manual

Model: Akvh 10-5 | Brand: Danfoss

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Danfoss Electric Expansion Valve Akvh 10-5. Please read this manual thoroughly before attempting any installation or operation to ensure proper function and to prevent damage or injury. This valve is designed for precise control of refrigerant flow in various refrigeration and air conditioning systems, including those using CO2.

2. Safety Information

Always adhere to local regulations and safety standards when working with refrigeration systems. Failure to do so may result in serious injury or property damage.

- **Qualified Personnel:** Installation and servicing must only be performed by qualified and authorized personnel.
- **Pressure Release:** Ensure the system is depressurized and isolated before commencing any work on the valve.
- **Electrical Safety:** Disconnect power supply before making any electrical connections or performing maintenance.
- **Refrigerant Handling:** Handle refrigerants with care, following all safety guidelines for personal protective equipment (PPE) and ventilation.
- **Component Compatibility:** Ensure all system components are compatible with the refrigerant being used.

3. Product Overview

The Danfoss Electric Expansion Valve Akvh 10-5 is a high-precision electronic expansion valve designed for optimal control of refrigerant flow in demanding applications. It features robust construction and is suitable for use with CO2 refrigerants. The valve ensures efficient system operation by precisely regulating superheat.

An image showing the Danfoss Electric Expansion Valve Akvh 10-5, a brass-colored valve with copper tubing connections and a silver top. This valve is designed for precise refrigerant flow control.

4. Setup and Installation

Proper installation is crucial for the valve's performance and longevity.

1. **Mounting:** Mount the valve with the motor housing upwards. Ensure sufficient space for service and wiring.
2. **Brazing:** The valve connections are 3/8" x 1/2" ODF. Use appropriate brazing techniques to connect the valve to the refrigerant lines. Protect the valve body from excessive heat during brazing by wrapping it with a wet cloth or using a heat sink.
3. **Electrical Connection:** Connect the valve to the appropriate controller (e.g., Danfoss EKC 315A) according to the controller's wiring diagram. Ensure correct polarity and secure connections.
4. **Leak Test:** After installation, perform a thorough leak test on all connections using an appropriate leak detection method.
5. **Evacuation:** Evacuate the system to a deep vacuum to remove all non-condensable gases and moisture.

5. Operating Instructions

The Danfoss Akvh 10-5 valve operates in conjunction with an electronic superheat controller. The controller sends signals to the valve's stepper motor, which adjusts the valve's opening to maintain the desired superheat.

- **Initial Startup:** Follow the startup procedure outlined in the manual for your specific electronic superheat controller.
- **Parameter Setting:** Set the superheat setpoint and other control parameters on the controller according to system requirements and manufacturer recommendations.
- **Monitoring:** Monitor system pressures, temperatures, and superheat values to ensure optimal operation.

6. Maintenance

The Danfoss Akvh 10-5 valve is designed for minimal maintenance. However, regular system checks are recommended.

- **Annual Inspection:** Annually inspect the valve for any signs of external damage, corrosion, or leaks.
- **Connection Integrity:** Verify that all electrical and refrigerant connections are secure and free from wear.

- **System Cleanliness:** Ensure the refrigeration system is clean and free from contaminants, which can affect valve performance.
- **Filter Drier:** Regularly check and replace the system's filter drier as per system design and maintenance schedule.

7. Troubleshooting

Refer to the following table for common issues and their potential solutions. For complex problems, consult a qualified technician.

Problem	Possible Cause	Solution
Valve not opening/closing	No power to controller; Faulty wiring; Controller malfunction; Valve coil failure.	Check power supply; Verify wiring connections; Test controller; Check valve coil resistance.
Unstable superheat	Incorrect controller settings; Sensor malfunction; Refrigerant charge issue; System pressure fluctuations.	Adjust controller parameters; Check sensor calibration/replacement; Verify refrigerant charge; Investigate system stability.
Valve leaking	Loose connections; Damaged brazing; Internal valve wear.	Tighten connections; Re-braze if necessary; Valve replacement may be required.

8. Specifications

Key technical specifications for the Danfoss Electric Expansion Valve Akvh 10-5.

Attribute	Value
Model	Akvh 10-5
Part Numbers	068F4083, 068F5215, 068F5235
Connections	3/8" x 1/2" ODF
Refrigerant Compatibility	CO2 (R744) and others as specified by Danfoss
Manufacturer	Danfoss
Item Weight	12.8 ounces (approx. 0.36 kg)
ASIN	B07RBFSPTT
Date First Available	June 1, 2020

9. Warranty and Support

For specific warranty terms and conditions, please refer to the official Danfoss warranty statement provided with your purchase or visit the official Danfoss website. For technical support, spare parts, or service inquiries, please contact your authorized Danfoss distributor or Danfoss customer service. Always provide the full model number and part number when seeking support.

You can find more information and contact details on the Danfoss Store on Amazon or the official Danfoss website.