

Danfoss AK-CC210

Danfoss AK-CC210 115V Temperature Controller User Manual

Model: AK-CC210 | Part Number: 084B8534

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Danfoss AK-CC210 115V Temperature Controller. Please read this manual thoroughly before installing or operating the device to ensure safe and efficient use. Retain this manual for future reference.

2. SAFETY INFORMATION

Important Safety Instructions:

- Always disconnect power before performing any installation, wiring, or maintenance procedures.
- Installation and servicing must be performed by qualified personnel only, in accordance with all local and national electrical codes.
- Ensure the power supply voltage matches the controller's specifications (115V).
- Do not operate the controller in environments exceeding its specified operating conditions.
- Protect the controller from moisture, dust, and extreme temperatures.
- Use only genuine Danfoss replacement parts and accessories.

3. PRODUCT OVERVIEW

The Danfoss AK-CC210 is a compact and versatile temperature controller designed for various refrigeration and HVAC applications. It features a digital display and intuitive controls for precise temperature management.



Figure 3.1: Front and side view of the Danfoss AK-CC210 Temperature Controller. The image shows the black casing, the red digital display, and three control buttons on the front panel. On the left side, green terminal blocks for wiring connections are visible. A label with technical specifications is partially visible on the top surface.

Key Features:

- Digital temperature display (LCD or LED, as per specifications).
- User-friendly interface with dedicated function buttons.
- Precise temperature control capabilities.
- Robust design for industrial applications.

4. SETUP AND INSTALLATION

Before beginning installation, ensure all safety precautions are observed. The controller is designed for panel mounting.

4.1 Mounting

1. Cut a panel opening of the appropriate size (refer to specifications for dimensions).
2. Insert the controller into the opening from the front.
3. Secure the controller using the provided mounting clips from the rear of the panel. Ensure it is firmly seated.

4.2 Wiring

Refer to the wiring diagram printed on the side of the controller or in the full technical documentation for specific connection points. General wiring steps include:

- Connect the 115V AC power supply to the designated power terminals.
- Connect temperature sensors to the sensor input terminals. Ensure correct polarity if applicable.
- Connect control outputs (e.g., compressor, fan, defrost) to the respective relay terminals. Observe maximum current

ratings for each output.

- Ensure all connections are secure and properly insulated.

Note: Incorrect wiring can damage the unit and void the warranty. If unsure, consult a qualified electrician.

5. OPERATING INSTRUCTIONS

Once installed and powered, the controller will display the current temperature. The front panel typically includes a digital display and several buttons for operation.

5.1 Front Panel Controls

- **SET Button:** Used to access and confirm parameter settings.
- **Up/Down Arrows:** Used to navigate menus and adjust values.
- **Function Buttons:** May include buttons for manual defrost, fan control, or alarm reset, depending on the specific model configuration. Refer to the detailed product sheet for specific button functions.

5.2 Setting the Temperature Setpoint

1. Press the **SET** button. The current setpoint value will flash on the display.
2. Use the **Up** or **Down** arrow buttons to adjust the setpoint to the desired temperature.
3. Press the **SET** button again to confirm the new setpoint. The display will return to showing the current temperature.

5.3 Accessing and Adjusting Parameters

Advanced parameters (e.g., differential, alarm limits, defrost cycles) can be accessed through a specific key combination or by holding the SET button for an extended period. Consult the full technical manual for a complete list of parameters and their adjustment procedures.

6. MAINTENANCE

The Danfoss AK-CC210 controller is designed for reliable operation with minimal maintenance. Regular checks can help ensure optimal performance.

- **Cleaning:** Periodically clean the front panel with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Connections:** Annually inspect wiring connections for tightness and signs of corrosion. Ensure power is disconnected before inspection.
- **Sensor Check:** Verify sensor readings periodically against a calibrated thermometer if accuracy is critical.

Caution: Do not attempt to open the controller casing, as this may expose live components and void the warranty.

7. TROUBLESHOOTING

This section provides solutions to common issues. For more complex problems, contact Danfoss technical support.

| Problem | Possible Cause | Solution |
|--------------------------------|---|--|
| Controller display is blank. | No power supply. | Check power connections and circuit breaker. Ensure 115V supply. |
| Incorrect temperature reading. | Faulty sensor or incorrect sensor connection. | Verify sensor wiring. Test sensor resistance or replace if faulty. |

| Problem | Possible Cause | Solution |
|---|--|---|
| Controller not controlling temperature. | Incorrect setpoint, parameter settings, or faulty output relay. | Check setpoint and parameter settings. Verify output wiring. |
| Alarm indication. | Temperature outside limits, sensor error, or other system fault. | Identify alarm code (if displayed). Check temperature, sensor, and system components. |

8. SPECIFICATIONS

The following specifications apply to the Danfoss AK-CC210 115V Temperature Controller (Model 084B8534):

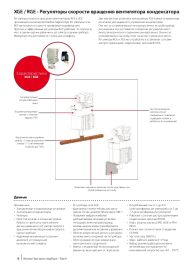





| Feature | Detail |
|--------------------|------------------|
| Model | AK-CC210 |
| Part Number | 084B8534 |
| Input Voltage | 115 Volts AC |
| Display Type | LCD or LED |
| Package Dimensions | 2 x 2 x 2 inches |
| Item Weight | 13.92 ounces |
| Color | Black |
| Manufacturer | CAI - DANFOSS |

9. WARRANTY

Danfoss products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the official Danfoss warranty statement provided with your purchase or visit the official Danfoss website. Generally, warranty covers defects in materials and workmanship under normal use and service.

10. SUPPORT

For technical assistance, spare parts, or further information regarding the Danfoss AK-CC210 Temperature Controller, please contact Danfoss customer support or visit their official website. You can find contact details on the product packaging or through the [Danfoss Store on Amazon](#).

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|  | <p>Danfoss XGE/RGE Регуляторы и ЕКС/АК-СС/АК-РС/АК-РС Контроллеры - Каталог продукции</p> <p>Полный каталог продукции Danfoss: регуляторы скорости вентилятора XGE/RGE и контроллеры температуры серий ЕКС, АК-СС, АК-РС, АК-РС, МСХ. Ознакомьтесь с техническими характеристиками, особенностями применения и моделями для холодильных систем и HVAC.</p> |
|  | <p>Danfoss AK-PC 781A Capacity Controller: User Guide for Refrigeration Systems</p> <p>Comprehensive user guide for the Danfoss AK-PC 781A capacity controller, detailing its features for refrigeration systems, including compressor and condenser control, heat recovery, and CO2 gas pressure management.</p> |
|  | <p>Danfoss AK-PC 782A User Guide: Transcritical CO2 Booster Control</p> <p>User guide for the Danfoss AK-PC 782A pack controller, detailing its application in transcritical CO2 booster systems, configuration, operation, and regulating functions for compressors and condensers.</p> |
|  | <p>Danfoss Troubleshooting Guide for Supermarket Electronics</p> <p>This comprehensive troubleshooting guide from Danfoss provides detailed steps and solutions for common issues encountered with their supermarket refrigeration and electronic control systems, including models AK-SM 800A, AK-SM 800, AK-CC55, AK-CC 550A, AK-CC 750, AK-XM Modules, AK-SC 255, and AKA 65.</p> |
|  | <p>Danfoss Optyma AK-RC 204B, 205C, 305W-SD Refrigeration Controller Data Sheet</p> <p>Comprehensive data sheet for Danfoss Optyma AK-RC series refrigeration controllers (AK-RC 204B, 205C, 305W-SD). Details features, functions, technical specifications, applications, wiring diagrams, mounting instructions, and ordering information for ensuring food quality in cold rooms and freezers.</p> |
|  | <p>Danfoss ADAP-KOOL Refrigeration Controls Data Communication Guide</p> <p>This design guide details the data communication systems used within Danfoss ADAP-KOOL® Refrigeration Control Systems, covering various communication protocols, installation requirements, and troubleshooting.</p> |

