Danfoss 077B0027

Danfoss 077B0027 Thermostat Instruction Manual

Model: 077B0027

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Danfoss 077B0027 Thermostat. Please read these instructions carefully before installation and use. Keep this manual for future reference.

2. Safety Information

Important: Installation and service must be performed by qualified personnel only. Disconnect power before servicing. Failure to follow these instructions could result in property damage, personal injury, or death.

- Ensure all local and national electrical codes are followed.
- Do not operate the thermostat with damaged components.
- Protect the capillary tube from sharp bends or mechanical damage.
- This device is designed for specific applications; do not use it for purposes other than those specified.

3. Product Overview

The Danfoss 077B0027 is a standard B0 type thermostat designed for temperature control in bottle coolers and similar refrigeration units. It features a capillary tube for sensing temperature and electrical contacts for controlling the cooling system.

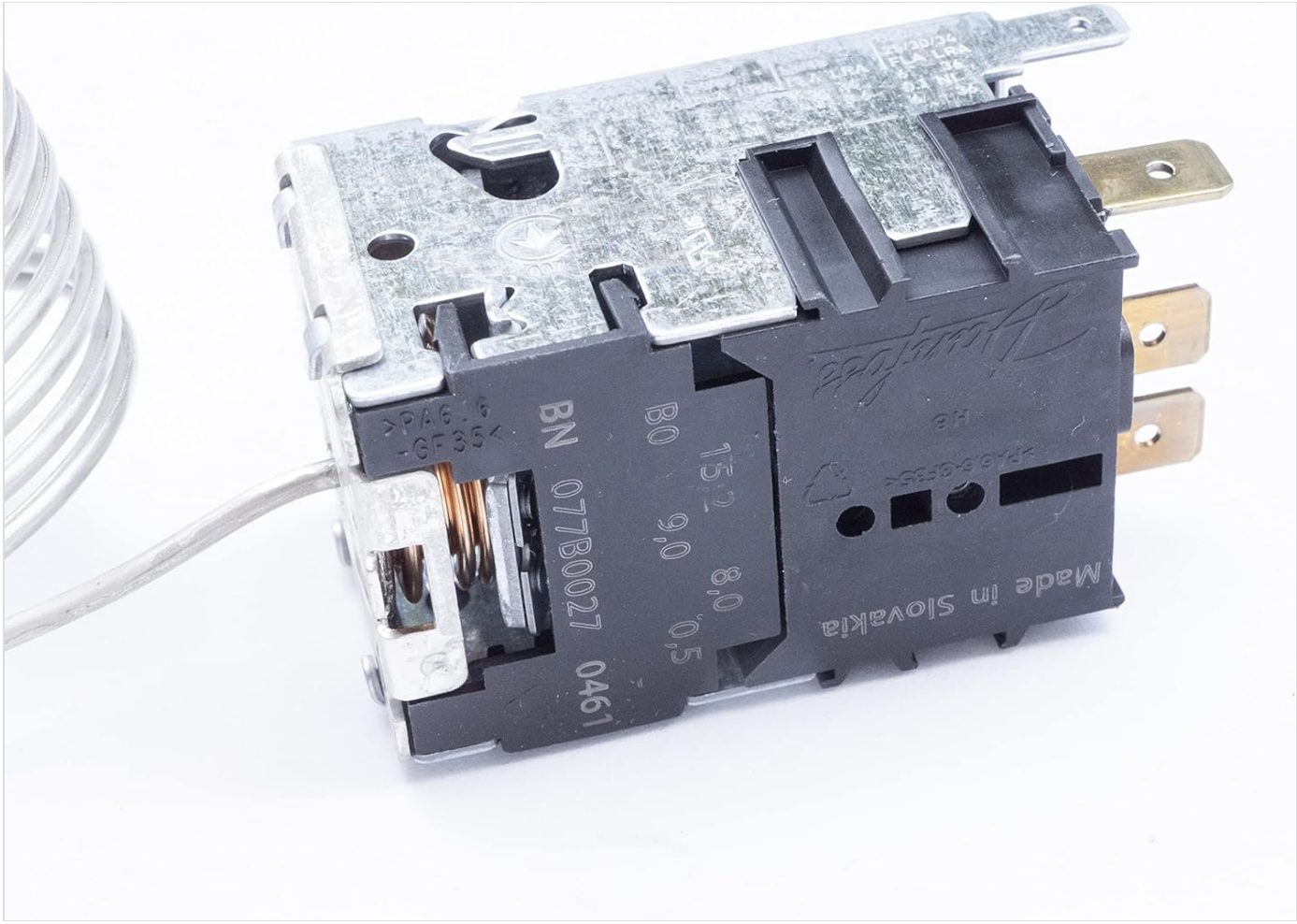

Figure 1: Main view of the Danfoss 077B0027 Thermostat, showing the control unit and coiled capillary tube.

Figure 2: Top view of the thermostat with its capillary tube coiled, ready for installation.

Key features include:

- Model: 077B0027 (also compatible with 077B0033)
- Type: B0 Standard Thermostat
- Application: Bottle coolers
- Capillary tube length: 1200 mm

4. Setup and Installation

Before beginning installation, ensure the power supply to the appliance is disconnected. Refer to the appliance's service manual for specific instructions regarding thermostat replacement.

4.1 Mounting the Thermostat

1. Identify the mounting location within the appliance. The thermostat should be securely fastened to prevent vibration.

2. Ensure adequate space for the capillary tube and electrical connections.

4.2 Capillary Tube Placement

The capillary tube is crucial for accurate temperature sensing. Its placement directly impacts the thermostat's performance.

Figure 3: A hand holding the thermostat, illustrating the capillary tube extending from the unit. The tube should be handled carefully to avoid kinks.

- Carefully uncoil the 1200 mm capillary tube. Avoid sharp bends or kinks, as this can damage the sensor.
- Position the sensing bulb (end of the capillary tube) in the area where temperature control is required, typically within the refrigerated compartment.
- Ensure the capillary tube does not touch any hot surfaces or moving parts.

4.3 Electrical Connections

Connect the thermostat to the appliance's electrical system according to the wiring diagram provided with your appliance. The thermostat typically has terminals for power input and compressor control.

Figure 4: Detailed view of the electrical terminals on the thermostat. Ensure correct wiring to these terminals.

Figure 5: An alternative angle showing the electrical connections, highlighting the numbered terminals (3, 4, 6).

- Ensure all connections are secure and properly insulated.
- Verify correct polarity and voltage before restoring power.

5. Operating Instructions

Once installed, the thermostat automatically regulates the temperature within the specified range. The temperature

settings are factory-calibrated for optimal performance in bottle coolers.

- **Hot Cut-in Value:** 15.2 °C
- **Hot Cut-out Value:** 9.0 °C
- **Cold Cut-in Value:** 8.0 °C
- **Cold Cut-out Value:** 0.5 °C

The thermostat will cycle the compressor on and off to maintain the temperature within these parameters. No user adjustment is typically required for standard operation.

6. Maintenance

The Danfoss 077B0027 Thermostat is designed for long-term, reliable operation with minimal maintenance. However, periodic checks can help ensure optimal performance.

- **Visual Inspection:** Periodically inspect the thermostat and capillary tube for any signs of physical damage, corrosion, or loose connections.
- **Cleaning:** Ensure the area around the thermostat and capillary tube is free from dust and debris, which could affect temperature sensing.
- **Functionality Check:** If the appliance is not maintaining temperature correctly, consult the troubleshooting section or a qualified technician.

7. Troubleshooting

If you experience issues with your refrigeration unit after installing the Danfoss 077B0027 Thermostat, consider the following common problems and solutions:

Problem	Possible Cause	Solution
Appliance not cooling	No power to thermostat; faulty wiring; damaged capillary tube; faulty compressor.	Check power supply and circuit breaker. Verify wiring connections. Inspect capillary tube for damage. Consult a technician for compressor issues.
Appliance cooling too much/too little	Improper capillary tube placement; thermostat malfunction.	Ensure capillary tube is correctly positioned in the sensing area. If issues persist, the thermostat may need replacement.
Thermostat not cycling	Electrical connection issue; thermostat contacts stuck.	Check all electrical connections. If contacts are stuck, replace the thermostat.

For problems not listed here, or if solutions do not resolve the issue, contact a qualified refrigeration technician.

8. Specifications

Feature	Value
Brand	Danfoss
Model Number	077B0027 (also 077B0033)
Type Designation	Standard Thermostat B0

Feature	Value
Application	Bottle Coolers
Hot Cut-in Value	15.2 °C
Hot Cut-out Value	9.0 °C
Cold Cut-in Value	8.0 °C
Cold Cut-out Value	0.5 °C
Capillary Tube Length	1200 mm

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact your Danfoss supplier. Keep your proof of purchase for warranty claims.