Danfoss 077B0027

Danfoss 25T65 Thermostat 077B0027 Instruction Manual

Model: 077B0027 | Brand: Danfoss

1. Product Overview

The Danfoss 25T65 Thermostat, model 077B0027, is a standard thermostat designed for temperature control in applications such as bottle coolers. This device is engineered to regulate cooling cycles by sensing temperature changes via its capillary tube and activating or deactivating the cooling system accordingly.
Key operational values for this thermostat include a hot cut-in value of 15.2°C, a hot cut-out value of 9.0°C, and a cold cut-in value of 0.5°C. The capillary tube length is 1200 mm, allowing for flexible placement of the sensing element.

2. Safety Information

Important: Installation and maintenance of this thermostat should only be performed by qualified personnel. Disconnect power to the appliance before installation, maintenance, or troubleshooting to prevent electric shock or equipment damage.

- Always follow local electrical codes and regulations.
- Ensure proper grounding of the appliance.
- Do not bend the capillary tube sharply or kink it, as this can damage the sensing element.
- Verify that the thermostat's specifications match the requirements of your appliance.

3. Product Components

The Danfoss 077B0027 thermostat consists of the main control unit, electrical terminals, and a capillary tube with a sensing bulb.

Figure 3.1: Front view of the Danfoss 077B0027 thermostat, showing the main body, electrical contacts, and the extended capillary tube. The unit has markings indicating its model number and origin.

Figure 3.2: Top view of the thermostat, illustrating the coiled capillary tube and the shaft for the temperature adjustment knob (knob not included). This view highlights the compact design of the unit.

Figure 3.3: Underside view of the thermostat, clearly showing the electrical spade terminals for wiring connections. The text "Made in Slovakia" is visible on the housing.

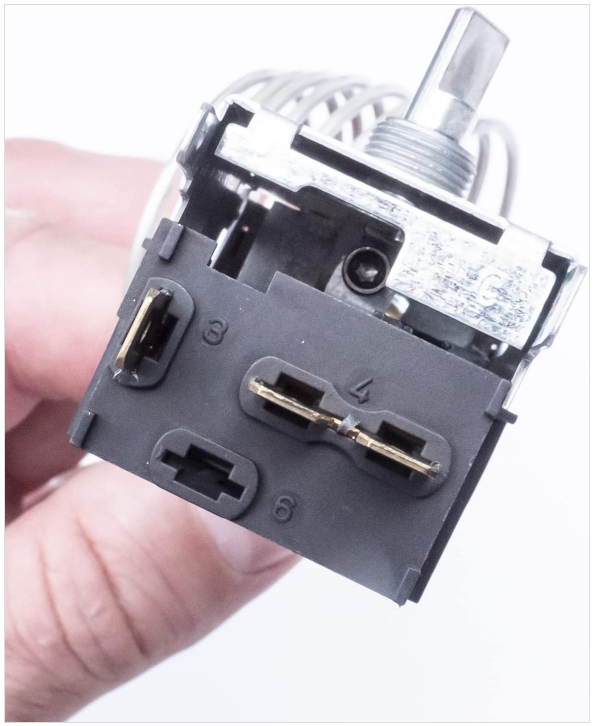

Figure 3.4: Detailed close-up of the electrical terminals, labeled '3', '4', and '6', indicating connection points for power and load. This view is crucial for correct wiring.

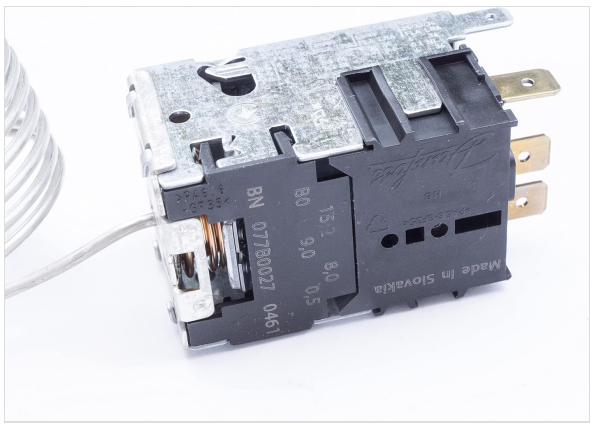

Figure 3.5: Top-down perspective of the thermostat, displaying the

Danfoss brand logo and various technical specifications printed on the housing, including temperature values and model number.

4. Setup and Installation

Installation of the Danfoss 077B0027 thermostat requires careful attention to electrical connections and proper placement of the capillary tube. It is strongly recommended that installation be performed by a certified technician.

4.1 Pre-Installation Checks

- Ensure the power supply to the appliance is disconnected.
- Confirm that the new thermostat matches the specifications of the original unit.
- Inspect the capillary tube for any damage or kinks.

4.2 Mounting the Thermostat

1. Mount the thermostat control unit in a secure location, typically within the control panel of the appliance.
2. Route the capillary tube to the area where temperature sensing is required (e.g., inside the refrigeration compartment).
3. Ensure the sensing bulb at the end of the capillary tube is securely fastened and in good thermal contact with the area to be monitored. Avoid placing it near heat sources or air vents that could provide inaccurate readings.

4.3 Electrical Connections

Refer to the wiring diagram provided with your appliance or consult a qualified electrician. The thermostat typically has terminals for line input, compressor output, and potentially a fan or defrost heater. Ensure all connections are tight and secure.

5. Operating Instructions

Once installed, the Danfoss 077B0027 thermostat operates automatically to maintain the desired temperature within the appliance.

5.1 Temperature Adjustment

- The thermostat features an adjustment shaft (refer to Figure 3.2) to set the desired temperature. This shaft typically connects to a control knob on the appliance's exterior.
- Rotate the knob to increase or decrease the set temperature. Turning towards a colder setting will cause the compressor to run more frequently or for longer durations.
- Allow sufficient time for the appliance to reach the new set temperature after adjustment.

5.2 Operational Cycle

The thermostat monitors the temperature via its capillary tube. When the temperature rises above the set point (hot cut-in value), it activates the cooling system. When the temperature drops to the desired level (hot cut-out value), it deactivates the cooling system. The cold cut-in value ensures the system reactivates if the temperature rises again after a period of inactivity.

6. Maintenance

The Danfoss 077B0027 thermostat is designed for reliable operation with minimal maintenance. However, periodic checks can help ensure its longevity and proper function.

- **Cleaning:** Ensure the area around the thermostat and its capillary tube is free from dust and debris, which could affect temperature sensing.
- **Inspection:** Periodically inspect the capillary tube for any signs of damage, kinks, or corrosion. Ensure it remains securely in place.
- **Electrical Connections:** With power disconnected, occasionally check electrical connections for tightness and signs of corrosion.
- **Professional Check:** For commercial applications, consider annual professional inspection of the refrigeration system, including the thermostat.

7. Troubleshooting

If your appliance is not maintaining the correct temperature, the thermostat may be a contributing factor. Always ensure power is disconnected before attempting any inspection or repair.

7.1 Common Issues and Solutions

- **Appliance Not Cooling / Cooling Continuously:**
  - Check if the thermostat is set to the correct temperature.
  - Inspect the capillary tube for damage or improper placement. If the tube is damaged, the thermostat will need replacement.
  - Verify electrical connections are secure.
  - If the compressor runs continuously and the temperature is too high, the thermostat may not be sensing correctly or its contacts are stuck closed.
  - If the compressor does not run at all and the temperature is too high, the thermostat contacts may be stuck open or there's a power issue.
- **Inaccurate Temperature Readings:**
  - Ensure the sensing bulb is correctly positioned and not influenced by external heat sources or drafts.
  - Clean any debris from around the sensing bulb.

If troubleshooting steps do not resolve the issue, contact a qualified service technician. Do not attempt to repair a faulty thermostat yourself, as it is a sealed unit.

8. Specifications

Feature	Value
Brand	Danfoss
Model Number	077B0027
Product Type	Standard Thermostat (B0)
Application	Bottle Cooler
Hot Cut-in Value	15.2 °C
Hot Cut-out Value	9.0 °C
Cold Cut-in Value	0.5 °C

Feature	Value
Capillary Tube Length	1200 mm
Product Dimensions (L x W x H)	10 x 5 x 5 cm
Manufacturer	Danfoss

9. Warranty and Support

Specific warranty information for the Danfoss 077B0027 thermostat may vary depending on the region and point of purchase. Please refer to the warranty documentation provided with your original appliance or contact your supplier for details.

For technical support or service inquiries, please contact Danfoss customer service or an authorized Danfoss service partner. Contact information can typically be found on the official Danfoss website or through your product supplier.