

Danfoss Thermot 088H3220 Thermal Actuator Instruction Manual

1. PRODUCT OVERVIEW

1.1 General Description

The Danfoss Thermot 088H3220 thermal actuator is designed for precise control in heating and cooling systems. It operates silently and is maintenance-free. This actuator is specifically engineered to open and close valves on heating circuit distributors for surface radiators and surface cooling systems. It functions as a normally closed (NC) device, meaning it is closed when no power is supplied.

1.2 Key Features

- **Normally Closed (NC) Operation:** The valve remains closed without power.
- **M30 x 1.5 mm Threaded Connection:** Ensures broad compatibility with various valve types.
- **Visual Operating Indicator:** Provides clear status of valve position (open or closed).
- **First-Open Function:** Facilitates initial system setup and filling.

1.3 Benefits

- **Compact Design:** Allows for installation in confined spaces.
- **Low Power Consumption:** Energy-efficient operation.
- **Easy Function Control:** Simple and reliable operation.
- **Ideal for Renovation Projects:** Adaptable to existing systems.

2. INSTALLATION

2.1 Mounting Instructions

The Danfoss Thermot 088H3220 actuator features an M30 x 1.5 mm threaded connection for direct mounting onto compatible valves. Ensure the valve is clean and free of debris before attachment. Hand-tighten the

actuator onto the valve until secure. Do not overtighten.



Image showing the Danfoss Thermot 088H3220 thermal actuator, a white cylindrical device with a red and black top, and a metallic threaded base.

2.2 Electrical Connection

This actuator requires a 230 V AC power supply. A 3 A fuse is necessary for protection within the electrical circuit. Connect the actuator in combination with a suitable room temperature controller (e.g., Danfoss RET, FHW, TP series, or CF radio-controlled system, Link system, and other leading manufacturers). Always ensure electrical connections are made by a qualified professional and comply with local electrical codes.

2.3 Compatibility

The M30 x 1.5 mm threaded connection ensures compatibility with a wide range of valves. Known compatible manufacturers include:

- Heimeier HKV
- Oventrop HKV
- KaMo HKV
- Artiga HKV

- Cosmo/Cosmoroll HKV
- Roth HKV
- Artiga/Strawa HKV
- Empur HKV
- Herotec HKV
- Protection HKV
- Zewotherm HKV

For compatibility with other manufacturers, please consult their documentation or contact Danfoss support.

3. OPERATION

3.1 Functional Overview

The Thermot thermal actuator works in conjunction with a room temperature controller. When the controller signals a demand for heat (or cooling), the actuator receives power, causing its internal element to expand and slowly open the valve. When the demand is met, power is removed, the element contracts, and the valve slowly closes. The full movement of the valve spindle takes approximately 3 minutes.

3.2 Visual Indicator

The actuator is equipped with a visible position indicator. This indicator allows you to visually confirm whether the valve is in an open or closed position, providing immediate feedback on the system's status.

4. MAINTENANCE

The Danfoss Thermot 088H3220 thermal actuator is designed for maintenance-free operation. No regular servicing, lubrication, or cleaning of the internal components is required. Ensure the external surfaces are kept clean and free from dust or debris to prevent obstruction of the visual indicator.

5. TROUBLESHOOTING

5.1 Actuator Not Responding

- **Verify Power Supply:** Ensure the actuator is receiving the correct 230 V AC power supply.
- **Check Fuse:** Inspect the 3 A fuse in the electrical circuit for any signs of damage or tripping.
- **Controller Connection:** Confirm that the actuator is correctly wired to the room temperature controller.
- **Controller Functionality:** Ensure the room temperature controller is operating correctly and sending the appropriate signal to the actuator.

5.2 Valve Not Opening/Closing Fully

- **Physical Obstructions:** Check for any physical obstructions around the valve spindle that might prevent full movement.
- **Secure Mounting:** Ensure the actuator is securely mounted and the M30 x 1.5 mm threaded connection is tight.
- **Movement Time:** Note that the full valve spindle movement takes approximately 3 minutes. Allow

sufficient time for the actuator to fully open or close the valve.

6. TECHNICAL SPECIFICATIONS

Specification	Value
Power Supply Voltage	230 V AC (3 A fuse required)
Max. Starting Current	230 V: 250 mA
Frequency	50-60 Hz
Power Consumption	2 W
Time for Full Valve Spindle Movement	~ 3 min
Ambient Temperature	0-60 °C
Stroke	2.4 mm (minimum after 5 years)
Adjusting Force (NC)	100 N
Adjusting Force (NO)	140 N
Closing Dimensions	11.8 ± 0.3 mm
Protection Class	IP 41
Cable Length	1.2 m
Connection Thread	M30 x 1.5 mm
Weight	770 grams

7. WARRANTY AND SUPPORT

For detailed warranty information, terms, and conditions, please refer to the official Danfoss website or the documentation provided with your purchase. In case of technical issues, questions, or support needs, please contact your local authorized Danfoss distributor or Danfoss customer service. Please retain your proof of purchase for any warranty claims.