

## Möhlenhoff Alpha 5 VA16H

# Möhlenhoff Alpha 5 24V Actuator VA16H User Manual

Model: Alpha 5 VA16H | Brand: Möhlenhoff

## 1. INTRODUCTION

The Möhlenhoff Alpha 5 is a 24V thermoelectric actuator designed for precise control of small valves and valve bases on heating circuit distributors in surface heating and cooling systems. This actuator facilitates energy-efficient individual room control within building automation and smart home environments.

Its innovative and patented valve adapter concept allows the Alpha 5 actuator to be seamlessly integrated with most heating circuit distributors and valve bases. It is primarily used for the automatic control of return valves on heating circuit distributors via a room thermostat.

### Key Features:

- Automatic control of return valves on heating circuit distributors via room thermostat.
- VA16H valve adjustment for compatibility with Polytherm and similar systems.
- Normally Closed (NC) operation: valve is closed when de-energized.
- Includes a 1-meter non-removable connection cable.
- Low operating power consumption: only 1W.
- 360° mounting position flexibility.
- First-Open function for easy installation and system filling.
- Integrated function display.
- TÜV certified for quality and safety.
- Stroke: 4 mm.

## 2. SAFETY INFORMATION

Please read this manual carefully before installation and operation. Failure to follow these instructions may result in product damage, property damage, or personal injury.

- Installation and electrical connections must be performed by a qualified electrician or heating technician in accordance with local regulations and standards.

- Ensure the power supply is disconnected before performing any installation, maintenance, or troubleshooting.
- The actuator operates on 24V. Do not connect to higher voltage supplies.
- Do not open the actuator housing. There are no user-serviceable parts inside.
- Protect the device from moisture, dust, and extreme temperatures.

### 3. PACKAGE CONTENTS

Verify that all components are present and undamaged upon unpacking:

- 1x Möhlenhoff Alpha 5 24V Thermoelectric Actuator
- 1x VA16H Valve Adapter (pre-assembled or separate)
- 1x 1-meter Connection Cable (integrated)



**Figure 1:** The Möhlenhoff Alpha 5 24V thermoelectric actuator, its VA16H valve adapter, and the included 1-meter connection cable. The actuator is white with a blue ring indicator, and the adapter is gray.

### 4. SETUP AND INSTALLATION

Follow these steps for proper installation of the Alpha 5 actuator:

1. **Prepare the Heating Circuit Distributor:** Ensure the heating circuit distributor and the valve base are clean and free from debris.
2. **Mount the VA16H Adapter:** If the VA16H adapter is not already attached to the actuator, securely fasten it to the valve base on the heating circuit distributor. The patented adapter concept ensures a precise fit.
3. **Attach the Actuator:** Place the Alpha 5 actuator onto the VA16H adapter. Gently push and twist until it clicks into place, ensuring a secure connection. The actuator can be mounted in any 360° position.
4. **Electrical Connection:** Connect the 1-meter integrated connection cable to the 24V control circuit as

per your system's wiring diagram. Ensure correct polarity if specified. The actuator is Normally Closed (NC), meaning the valve will be closed when no power is supplied.

5. **First-Open Function:** The actuator features a 'First-Open' function, which keeps the valve open during initial installation and system filling, even without power. This simplifies commissioning. The function display will indicate the valve status.
6. **Power On:** Once all connections are secure, restore power to the system. The actuator will then respond to signals from the room thermostat.

**Note:** Always consult your heating system's specific documentation for detailed wiring instructions and compatibility.

## 5. OPERATION

The Möhlenhoff Alpha 5 actuator operates thermo-electrically to regulate the flow of heating or cooling medium through the valve. When the connected room thermostat calls for heat (or cooling), the actuator receives a 24V signal, causing its internal element to heat up and expand. This expansion drives the valve stem, opening the valve and allowing fluid to flow.

When the thermostat no longer calls for heat, the power supply to the actuator is cut. As a Normally Closed (NC) device, the internal element cools and contracts, closing the valve and stopping the flow. This ensures energy efficiency by only allowing flow when required.

### Function Display:

The actuator includes a visual function display (often a small indicator pin or ring) that shows the current status of the valve:

- **Indicator visible/extended:** Valve is open.
- **Indicator not visible/retracted:** Valve is closed.

*The First-Open function keeps the valve open during initial setup, indicated by the display, until power is applied and the thermostat takes control.*

## 6. MAINTENANCE

The Möhlenhoff Alpha 5 actuator is designed for maintenance-free operation. No regular servicing is required.

- **Cleaning:** If necessary, gently wipe the exterior of the actuator with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically check the actuator and its connections for any signs of damage or loose wiring.
- **Internal Components:** Do not attempt to open or repair the actuator. Internal components are not user-serviceable. Unauthorized opening will void the warranty.

## 7. TROUBLESHOOTING

If you experience issues with your Alpha 5 actuator, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
---------	----------------	----------

Problem	Possible Cause	Solution
Actuator does not open/close valve.	No power supply (24V). Faulty wiring. Thermostat not calling for heat. Actuator or valve stuck.	Check 24V power supply to the actuator. Verify wiring connections are secure and correct. Check room thermostat settings and operation. Manually check if the valve stem moves freely. If not, the valve may need servicing.
Function display not changing.	No power or signal. Actuator malfunction.	Confirm power and thermostat signal. If power is present and the thermostat is calling for heat, but the display does not change after several minutes, the actuator may be faulty.
Valve remains open/closed permanently.	Continuous power supply/no power supply. Actuator failure.	Check thermostat and control system for continuous signal or lack thereof. If the signal is correct but the actuator does not respond, it may need replacement.

*If the problem persists after attempting these solutions, contact a qualified technician or Möhlenhoff customer support for assistance.*

## 8. SPECIFICATIONS

<b>Manufacturer:</b>	Möhlenhoff
<b>Model:</b>	Alpha 5 VA16H
<b>Operating Voltage:</b>	24V
<b>Operating Power:</b>	1W
<b>Cable Length:</b>	1 meter (non-removable)
<b>Operation Type:</b>	Normally Closed (NC)
<b>Mounting Position:</b>	360° flexible
<b>Stroke:</b>	4 mm
<b>Certification:</b>	TÜV certified
<b>Package Dimensions:</b>	8.8 x 8 x 5.6 cm
<b>Weight:</b>	280 grams

## 9. WARRANTY AND SUPPORT

For warranty information, technical support, or spare parts inquiries, please contact Möhlenhoff directly or your authorized dealer. Keep your purchase receipt as proof of purchase.

Information regarding spare parts availability is currently not provided by the manufacturer. Please contact

Möhlenhoff for specific inquiries.