# Heating Actuators [AKH-0x00.03]

The integrated temperature controller (heating and cooling) allows the MDT Heating Actuators AKH-0x00.03 to control up to 8 channels independently. Up to 4 electrothermic valve drives (24/230 V AC) can be operated at the wear-free outputs on each channel. If more than 4 valve drives are required, the outputs can be linked quickly and easily via the internal connection. Operated in heating mode, each channel also offers the option of activating its own additional level in order to shorten the heating phase of sluggish systems. "2-point control" or "switching PI control" (PWM) is possible. When using an external temperature controller, the outputs can be controlled via 1 bit (switching) or 1 byte (continuous).


## Integrated PI temperature controller (heating and cooling)

The integrated and comprehensive PI temperature controller just needs the actual temperature of the room to start the regulation. This can be provided by the MDT Push Buttons with temperature sensor for example. The combination of an MDT Heating Actuator and an MDT Push Button with temperature sensor enables inexpensive individual temperature control without the use of an additional room temperature controller. Each channel can be parameterised as a standalone system. In a "2 pipe system" for example, the entire house can operate in heating mode while a single room with a separate cooling system remains in cooling mode. It is possible to configure the setpoints completely individually (Comfort, Night, Standby), independently of the basic comfort setpoint. The setpoint shift can be done classically via 1 bit (step), 1 byte (counter pulses) and via 2 bytes (temperature difference and absolute value). This also provides a high compatibility with other visualisations. Setpoints are saved in the case of a bus voltage failure and are retained.

## Lock heating/cooling operation while windows are open

If, for example, a window is opened for ventilation in winter, the heating actuator disables the heating operation and switch into frost protection mode. As soon as the window is closed, the heating mode is activated again. In cooling mode, the heat protection would be activated.

## Minimum flow temperature

It is possible to set a minimum comfort temperature for the floor heating e.g., for the bathroom. To do this, the floor temperature is measured with an additional sensor and kept at 18 °C, for example. This prevents a cold floor without overheating the room.

## Automatic calculation to determine summer/winter

In addition to switch by summer/winter object, the new heating actuator now also has the ability to automatically calculate summer and winter operation. To do this, only the time and the outdoor temperature are needed.

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## Energy optimisation through pump shutdown

The application of the MDT Heating Actuator provides one object each for heating and cooling requests. For example, as long as there is a heating request in the rooms and the heating circuit valves are open (control values greater than zero), the object "Heating requirement" remains at 1 and the circulation pump is switched on. If the heat request is covered and all heating circuit valves are closed (control values zero), the object "Heating requirement" is set to 0 and the circulation pump is switched off.

## Extended scene function

In addition to the setpoint temperature, the extended scene function can also switch the Comfort, Night, Standby and Frost/Heat protection operating modes.

## Reference control via outside temperature

It is possible to control the setpoint via the outside temperature, while the channel is in cooling mode. This raises the setpoint linearly to limit the temperature differences between the outside and inside temperatures.

## Sticking protection for valves

If heating valves are not used for a longer period of time, there is a danger that they will become stuck. To avoid this, a protective function is integrated in the heating actuator. When activated, the heating valve is opened and closed for 5 minutes every 6 days.

## Emergency mode

This monitors whether an input signal is received within a set time. If the actuator does not receive a telegram, the respective channel of the heating actuator goes into emergency mode. The control values for the emergency mode can be parameterised separately for heating and cooling.

## Plain text diagnosis

The heating actuator has a plain text diagnosis and outputs the current status/error status via a 14-byte object per channel. This allows errors to be localised in a short time and makes commissioning much easier for the system integrator.

## Updateable via DCA App

If necessary, the Heating Actuator can be updated via the MDT Update Tool (DCA). The download is available free of charge at www.mdt.de and www.knx.org.

## Long Frame Support

The MDT Heating Actuator supports "long frames" (longer telegrams). These contain more user data per telegram, which significantly reduces the programming time of the actuators with the ETS.