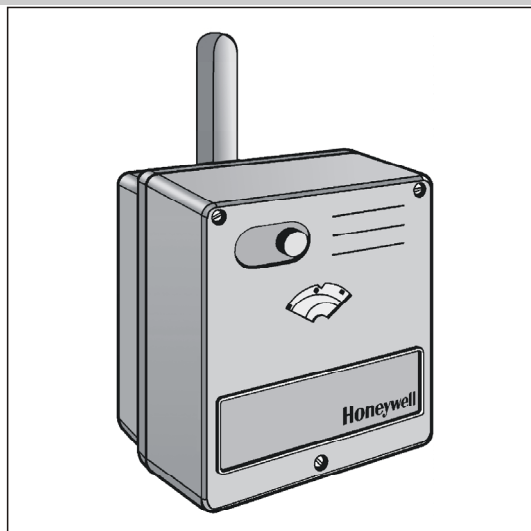


M7061 ROTARY VALVE ACTUATORS

PRODUCT DATA



APPLICATION

The Honeywell M7061 actuator is designed to provide modulating control in heating and air conditioning systems. High control performance and a robust design are standard for this actuator. In combination with the valve V5431, it is possible to control very exact heating and cooling water temperatures. The mechanical interface between actuator and valve is designed for reliable operation. Actuators with torques from 10 Nm up to 20 Nm are available for a wide range of rotary mixing valves (DN 15 up to DN 100).

FEATURES

- Protected against overload and blocking
- Maintenance-free electrical actuator for rotary valves
- Clear position indicator
- Direct mounting on rotary valves
- Manual operation
- High torque
- Large wiring cabinet
- Long lifetime

TECHNICAL DATA

Power supply	24 Vac ($\pm 20\%$), 47...60 Hz
Power consumption	100 mA
Control signal	0...10 V / 2...10 V
Angle of rotation	90°
Run time	model-dependent; see table
Nominal torque	model-dependent; see table
Protection standard	IP 54 per EN 60529
Insulation class	II per EN 60730
Ambient operating temperature	0...45 °C
Water temperatures in valve	2...110 °C
Relative humidity	non-condensing
Weight	1.5 kg

Model-Specific Technical Data

torque	run time	valve dimension	OS number
10 Nm	~ 1.5 min	DN15 to DN40	M7061E1012
20 Nm	~ 3.0 min	DN15 to DN80	M7061E1020

Suitable Valves

V5431A; V5431F

OPERATION

The actuator is powered by a DC-motor. The spindle of the actuator rotates 90°. The position is controlled by internal electronics.

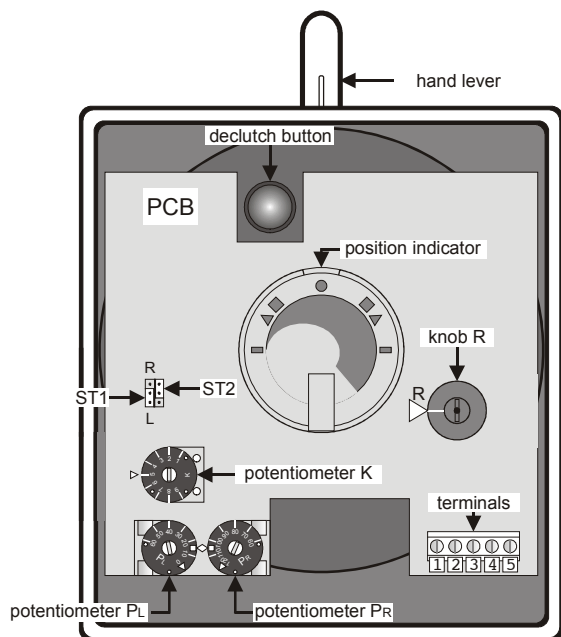


Fig. 1. Main features

The angle of rotation is electronically limited and can be adjusted (see section "Angle of Rotation"). The spindle can also be rotated manually by using the declutch button (see Fig. 1) to disengage the gear and then turning the hand lever. As soon the actuator is powered, the valve is driven by the actuator again.

An electrical overload circuit protects the actuator. If the rated torque is exceeded, the actuator is switched OFF automatically.

The actuator is maintenance-free.

Commissioning and Service

Input Signal Y

The input signal Y can be set using jumper **ST2** (see Fig. 1):

- ST2 in the upper position (factory setting):
 $Y = 0 \dots 10 \text{ Vdc}$
- ST2 in lower position:
 $Y = 2 \dots 10 \text{ Vdc}$

Direction of Motor Rotation

The direction of rotation can be defined using jumper **ST1** (see Fig. 1).

- ST1 in "L" (left) position (factory setting): clockwise rotation $0 \rightarrow 100\%$ (i.e. when $Y = 0 \text{ Vdc}$, the hand lever is at the left end)
- ST1 in "R" (right) position: counterclockwise rotation $100\% \leftarrow 0$ (i.e. when $Y = 0 \text{ Vdc}$, the hand lever is at the right end).

Adjusting Spindle to Feedback Potentiometer

The position of the spindle can be adjusted to match the signal from the feedback potentiometer using **knob R** (see Fig. 1). With the motor in the center position (the mark on the hand lever must line up with the mark on the motor housing), the graduation on knob R must point to the triangle on the PCB (factory setting). Adjustment is required only if the printed circuit board is changed for servicing.

Actuator Characteristic

The actuator characteristic, i.e. the relation between motor rotation and the input signal Y, can be altered to suit the given valve using **potentiometer K** (see Fig. 1). The curve of the characteristic between its start and end points can be adjusted infinitely between convex, linear and concave (see Fig. 2). Potentiometer K is marked with the numerals 1 through 9. The linear characteristic $K = 5$ is the factory setting.

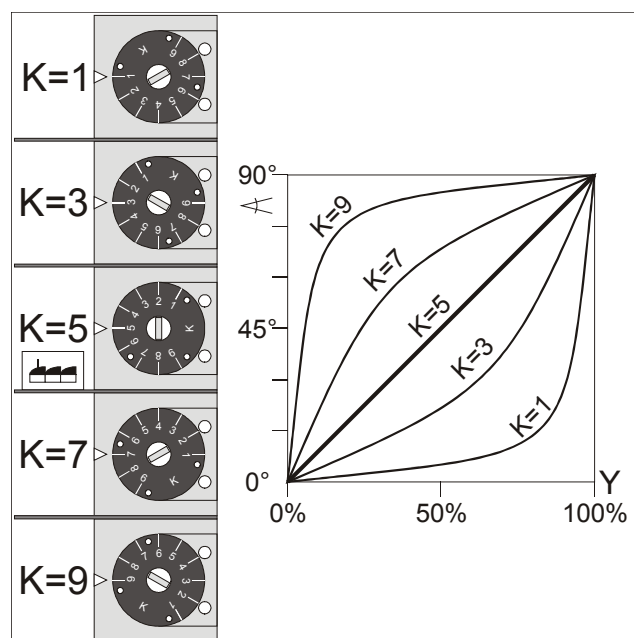


Fig. 2. Characteristic curve

Examples

When mounting the proportional actuator onto a valve with a linear characteristic, an equal percentage characteristic on the controlled unit can be achieved by setting a concave curve ($K \approx 3$).

An actuator used together with an oversized mixing valve is a further application requiring a concave curve ($K \approx 3$).

Angle of Rotation

The angle of rotation is adjustable via the **potentiometers P_L and P_R** (see Fig. 1). Start and end points can be adjusted independently.

The nominal angle is 90° ($105^\circ - 15^\circ = 90^\circ$); the potentiometers are factory set as follows: $P_L = 15$ and $P_R = 105$. These settings are marked by a square ■.

The desired angle can be adjusted by changing the start and end points; within the total range, all angles are possible.

The start point can be adjusted between 0 and 60° using potentiometer P_L , while the end point is adjustable between 60° and 120° using potentiometer P_R .

Fig. 3 shows an example setting of the angle rotation in which the start point has been set to 15° and the end point to 105° .

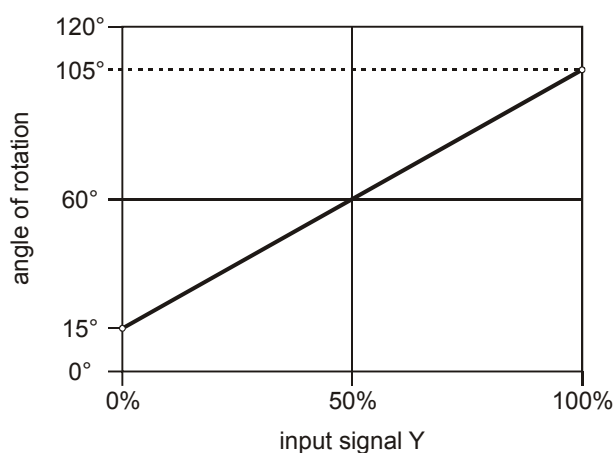


Fig. 3. Example setting of angle of rotation

Mounting on the Valve

Before mounting the actuator, position the rotary valve as appropriate (see also V5431A/F Product Data, EN0B-0077GE51).

For more information, see also M7061 Installation Instructions (MU1B-0243GE51).

Electrical Connection

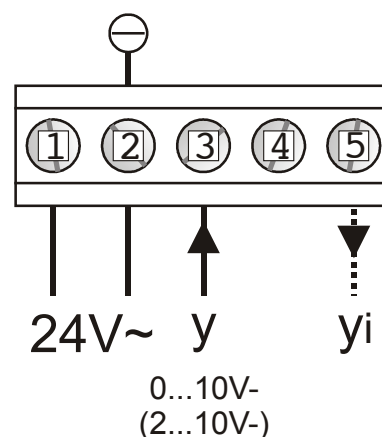


Fig. 4. Wiring

To override the input signal Y, i.e. in order to control the position from an external source, connect to motor terminals as follows:

- for a signal variable of 100%, connect terminal 3 to terminal 4
- for a signal variable of 0%, connect terminal 3 to terminal 2 (system ground or ground wire).

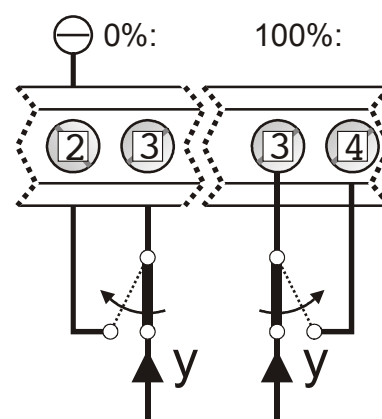


Fig. 5. Overriding the input signal

DIMENSIONS

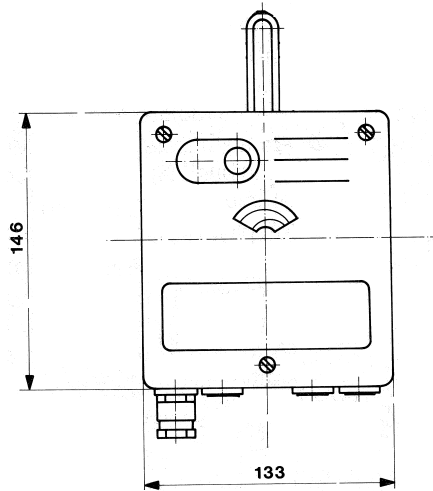


Fig. 6. M7061, dimensions (in mm)

Dimensions with V5431A (mm)

model	DN	c
V5431A1025	15	179
V5431A1033	20	179
V5431A1041	25	179
V5431A1058	32	188
V5431A1066	40	188

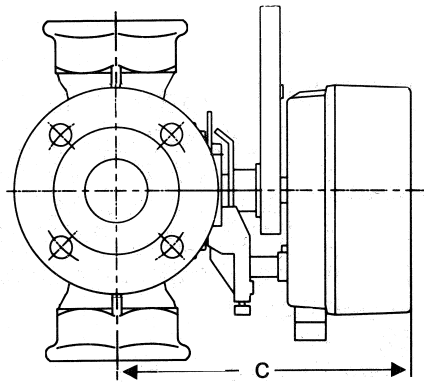


Fig. 7. M7061 with V5431A, dimensions

Dimensions with V5431F (mm)

model	DN	c
V5431F1032	20	179
V5431F1040	25	179
V5431F1057	32	188
V5431F1065	40	188
V5431F1073	50	202
V5431F1081	65	219
V5431F1099	80	219
V5431F1107	100	240
V5431F1115	125	267
V5431F1123	150	274

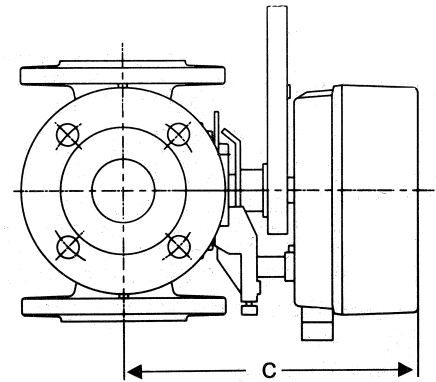


Fig. 8. M7061 with V543F, dimensions

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