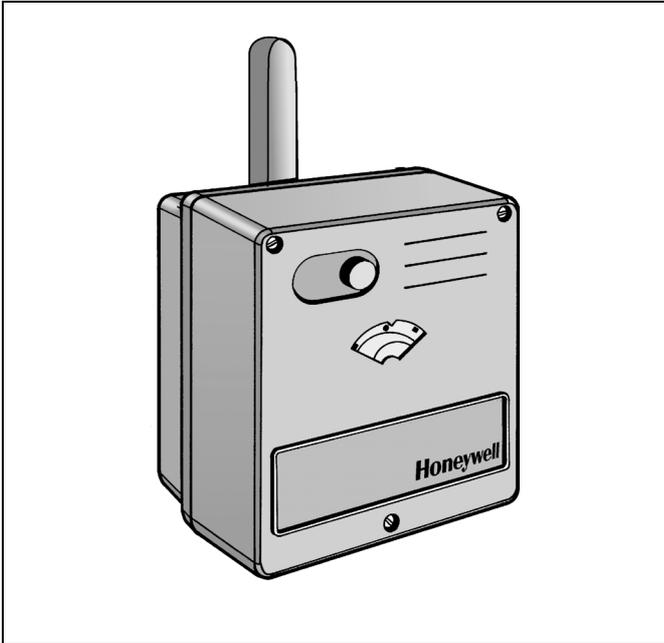


M7061 ROTARY VALVE ACTUATORS

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 life time

Specifications

Power supply	24 Vac ($\pm 20\%$), 47 to 60 Hz
Power consumption	100 mA
Control signal	0 to 10 V / 2 to 10 V
Angle of rotation	90°
Run time	Depending on type, see table
Nominal torque	Depending on type, see table
Protection standard	IP 54 per EN 60529
Insulation class	II per EN 60730
Ambient temperature for operation	0 to 45 °C
Water temperatures in the valve	2 to 110 °C
Relative humidity	noncondensing
Weight	1.5 kg

Specification per actuator

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

* reduced differential pressure

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. The angle of rotation is electronically limited. Adjustments are made by means of two potentiometers. In case of manual adjustment rotation is possible mechanically via the hand lever. An electrical overload circuit protects the actuator. When the rated torques are exceeded, the actuator is automatically switched off.

Manual operation declutches the gear from the valve. As soon the actuator is powered, the valve is driven by the actuator again.

The actuator is maintenance-free.

Commissioning and Service

Input Signal

Jumper **ST 2** is used to set the input signal.

1. Jumper ST 2 in lower position: input signal $Y = 0$ to 10 Vdc
2. Jumper ST 2 in upper position: input signal $Y = 2$ to 10 Vdc

Direction of Motor Rotation

With jumper **ST 1** (on printed circuit board) the direction of rotation can be defined.

1. Jumper ST 1 in lower position (see fig.):
clockwise rotation $0 \rightarrow 100\%$,
i.e. with signal $Y = 0$ Vdc the lever is at the left end.
2. Jumper ST 2 in upper position:
counterclockwise rotation $100\% \leftarrow 0$,
i.e. with signal $Y = 0$ Vdc the lever is at the right end.

Feedback Potentiometer

The knob "R" is used for potentiometer adjustment. With the motor in the center position – mark on lever is above the mark on motor housing – the graduation on knob "R" must point to the triangle on printed circuit board (factory setting). Adjustment is only required when the printed circuit board is changed for servicing.

Adaptation of the Characteristic to the Valve

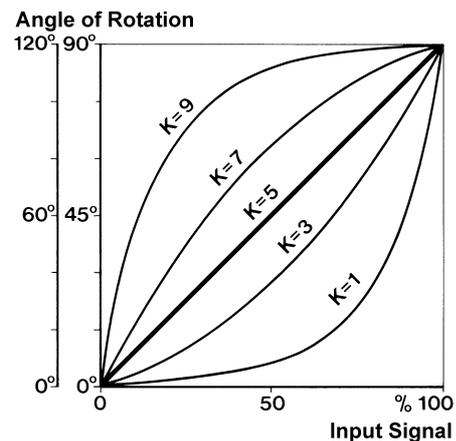
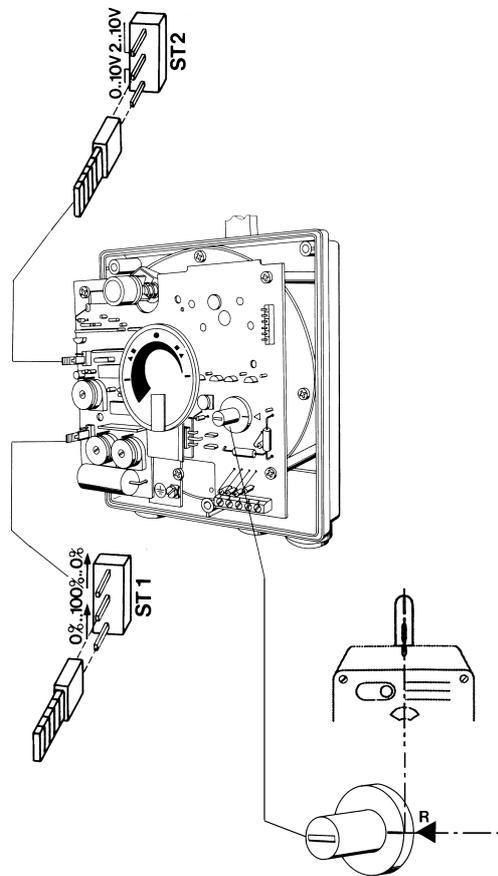
The actuator characteristic, i.e. the relation between motor rotation and input signal, can be altered by means of the potentiometer K on the printed circuit board.

The curve of the characteristic between its start and end points can be adjusted infinitely between convex, linear and concave. The potentiometer is marked with numbers 1 through 9. The linear characteristic $K = 5$ is factory set.

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 another application for a concave curve ($K \approx 3$).



Angle of Rotation

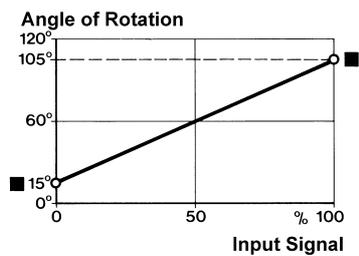
The angle of rotation is adjustable via the potentiometers P_L and P_R on the printed circuit board. Start and end points can be adjusted independently.

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

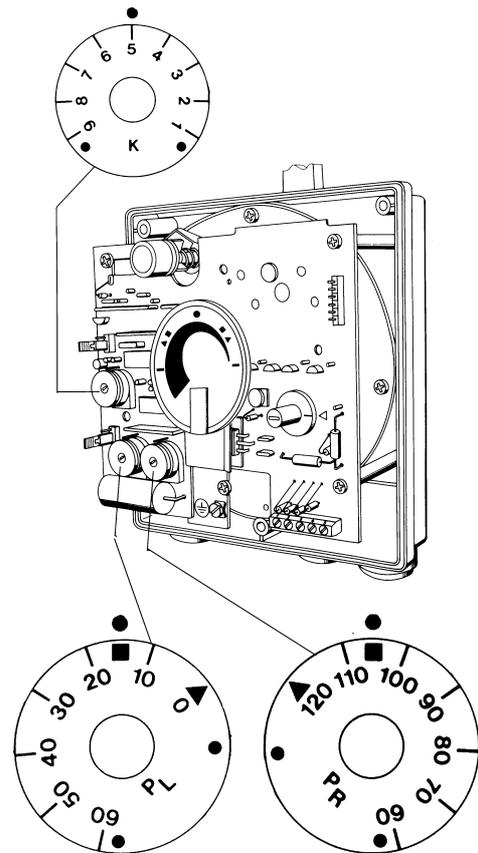
The total angle cannot be increased at random because the actuator can be moved only within the mechanical lever stroke.

The angle of rotation (max. 120° , min. 60°) is symmetrical to the center position. 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° at potentiometer P_L , while the end point is adjustable between 60° and 120° at potentiometer P_R .

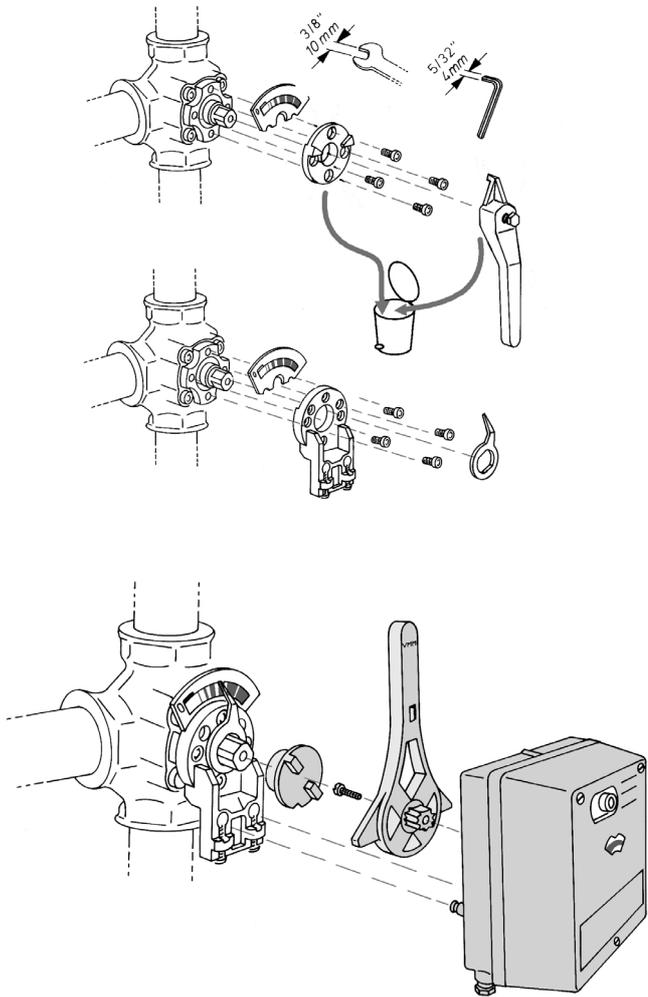
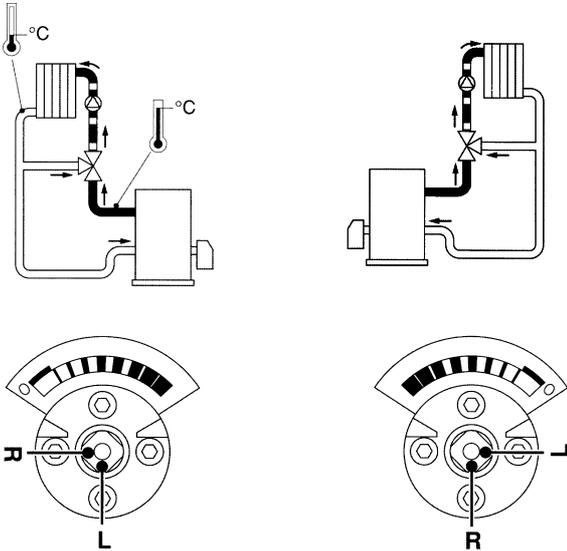


Angle of rotation 90°

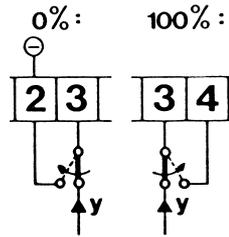
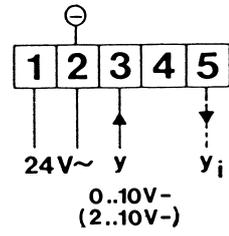


Mounting on the valve

Before mounting the actuator, position the rotary valve according to its installation instruction.



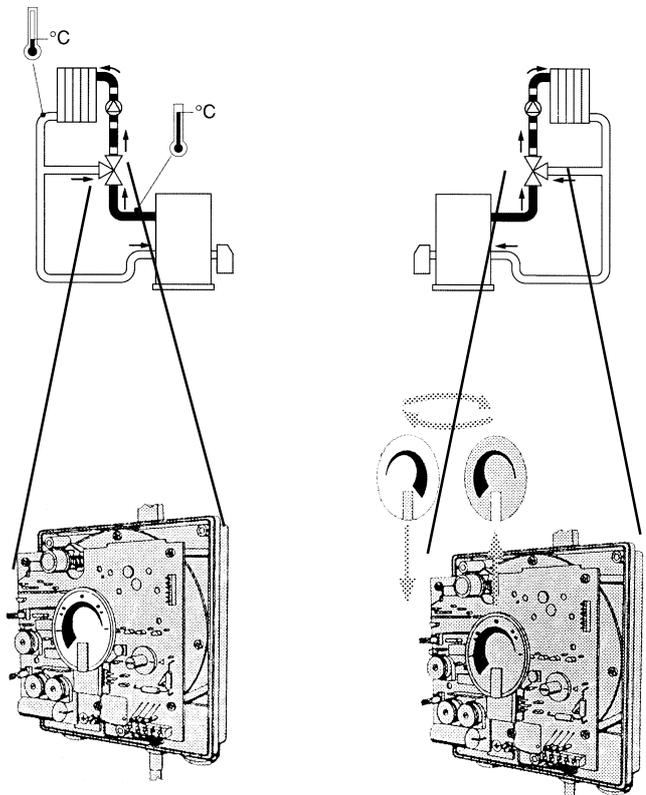
Electrical connection



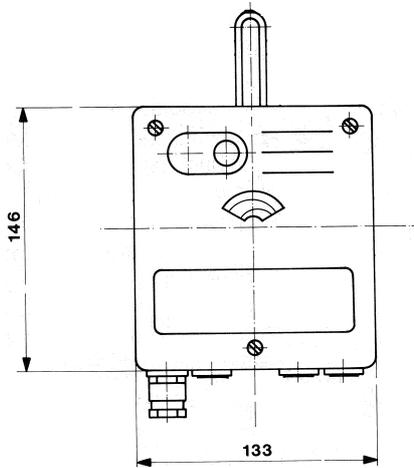
External control on position

To control the position from an external source, connect to motor terminals:

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

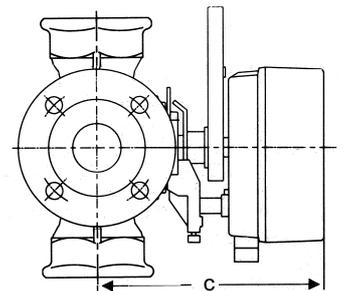
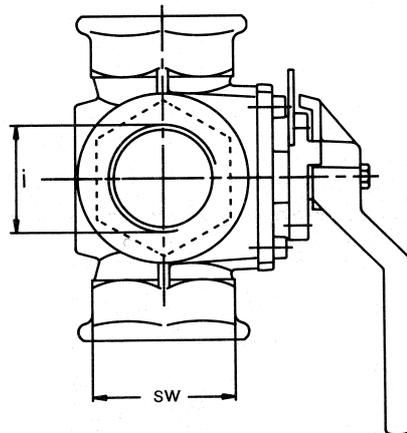
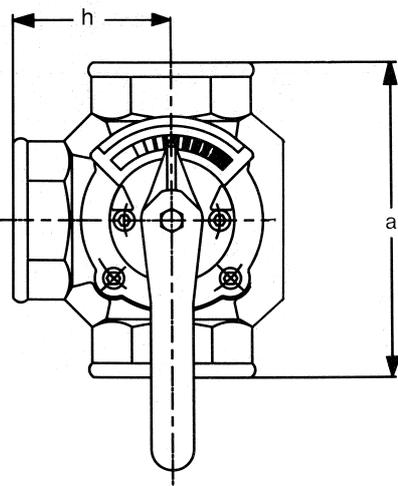


Dimensions (mm)



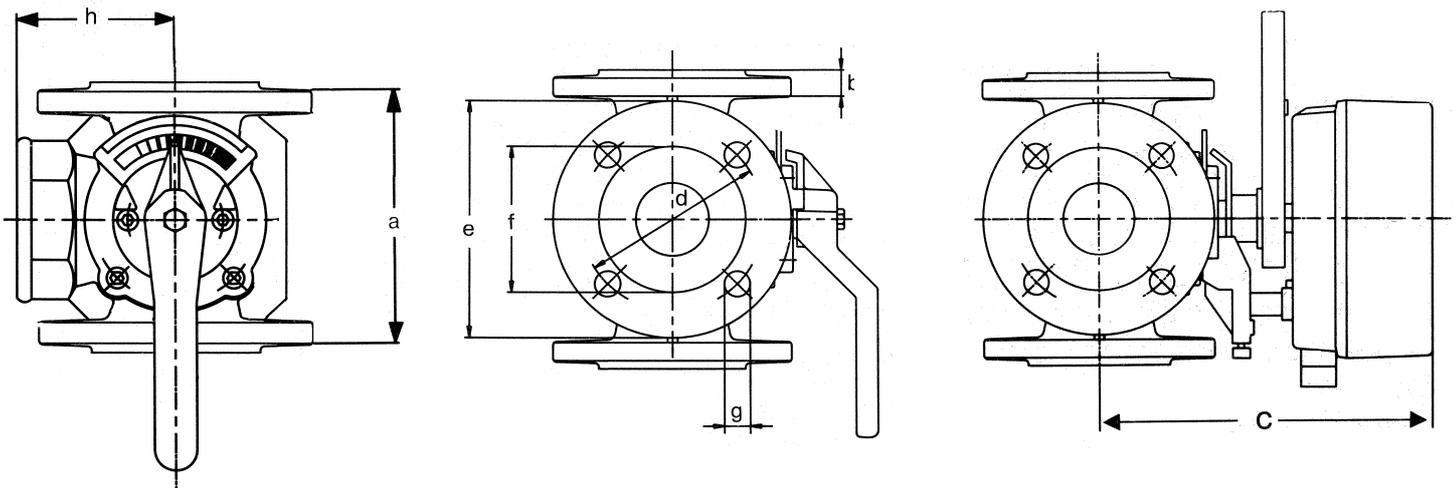
Dimensions with V5431A (mm)

Type	DN	a	c	SW	h	i
V5431A1025	15	110	179	41	55	R ½ in.
V5431A1033	20	110	179	46	55	R ¾ in.
V5431A1041	25	115	179	50	58	R 1 in.
V5431A1058	32	140	188	60	70	R 1 ¼ in.
V5431A1066	40	150	188	65	75	R 1 ½ in.



Dimensions with V5431F (mm)

Type	DN	a	b	c	d	e	f	g	h
V5431F1032	20	140	15	179	65	90	50	4x11	70
V5431F1040	25	150	15	179	75	100	60	4x11	75
V5431F1057	32	160	17	188	90	120	70	4x14	80
V5431F1065	40	170	16	188	100	130	80	4x14	85
V5431F1073	50	190	16	202	110	140	90	4x14	95
V5431F1081	65	210	16	219	130	160	110	4x14	105
V5431F1099	80	250	18	219	150	190	128	4x18	125
V5431F1107	100	270	18	240	170	210	148	4x18	135
V5431F1115	125	310	20	267	200	240	178	8x18	155
V5431F1123	150	330	20	274	225	265	202	8x18	165



Honeywell

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