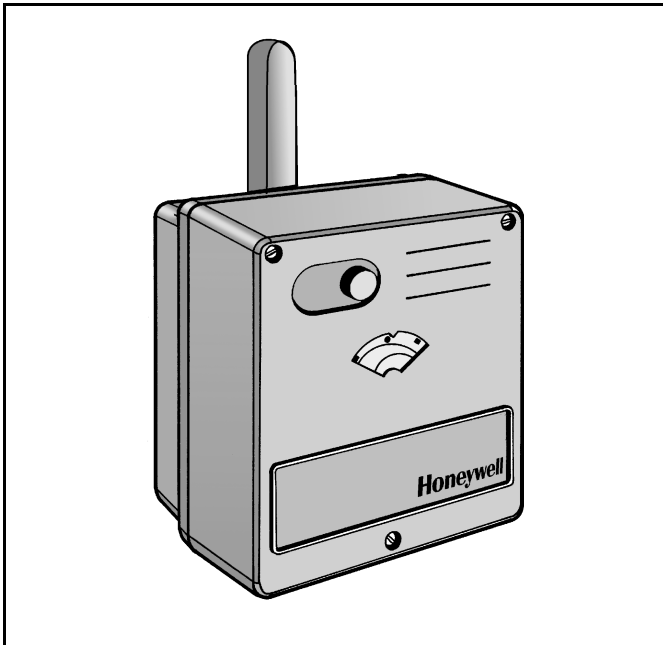


M7061 ROTARY VALVE ACTUATORS

PRODUCT DATA



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 |

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).

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

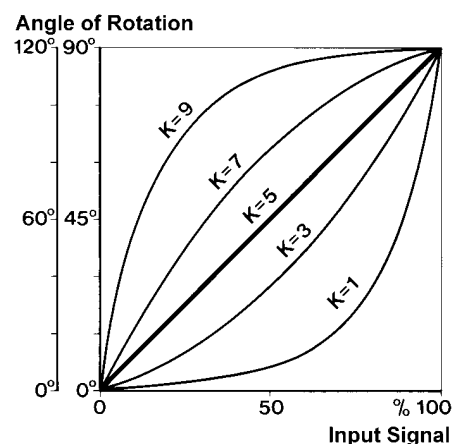
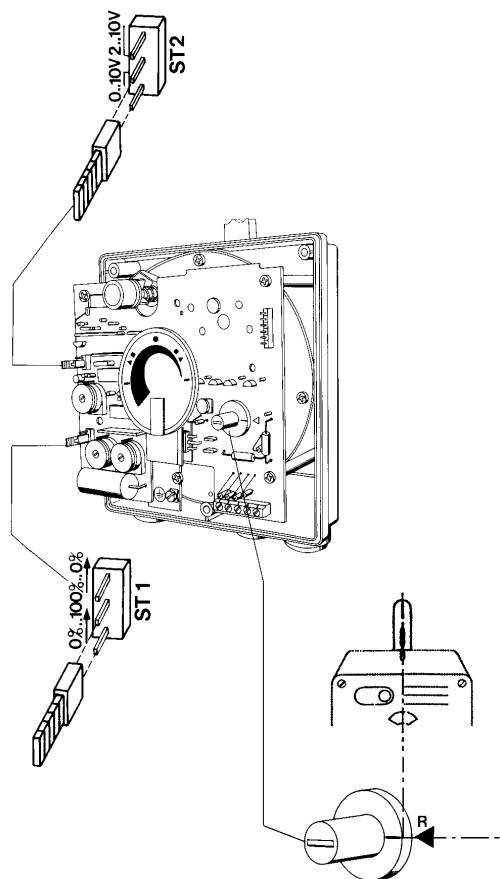
The actuator characteristic, i.e. the relation between motor rotation and input signal, can be altered by means of the potentiometer K on the printed circuit board.

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

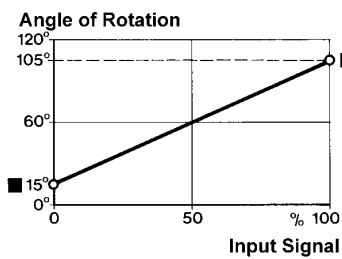
The angle of rotation is adjustable via the potentiometers P_L and P_R on the printed circuit board. Start and end points can be adjusted independently.

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 ■.

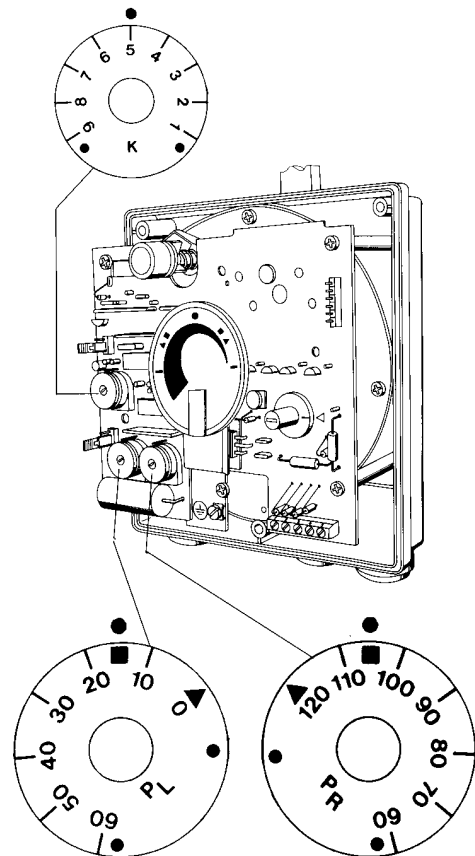
The total angle cannot be increased at random because the actuator can be moved only within the mechanical lever stroke.

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 .

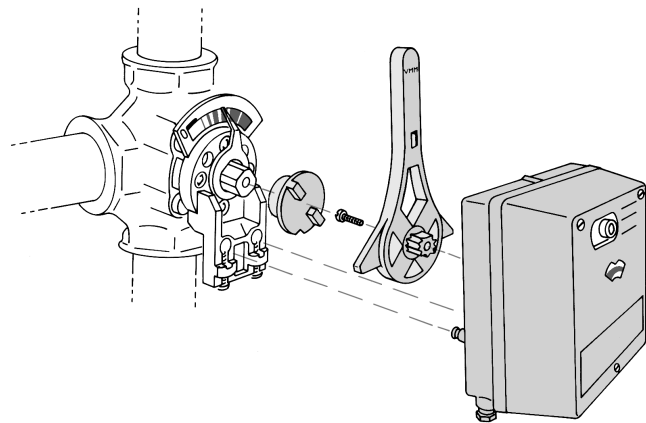
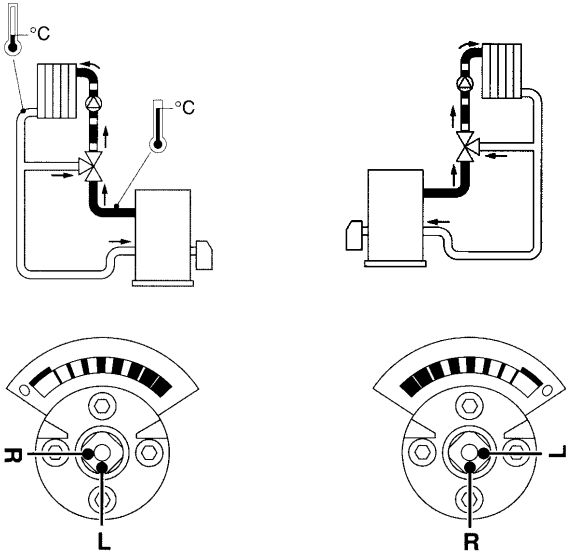


Angle of rotation 90°

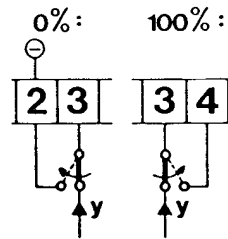
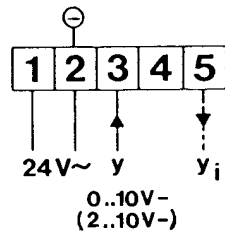


Mounting on the valve

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



Electrical connection



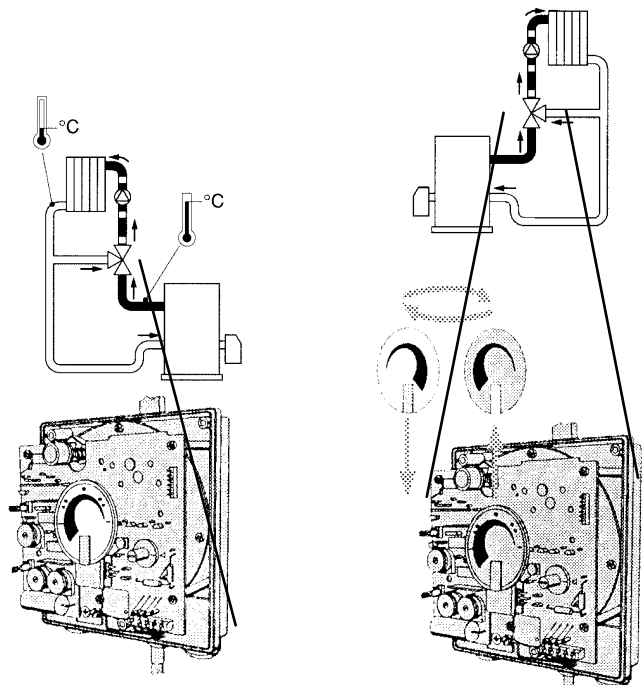
External control on position

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

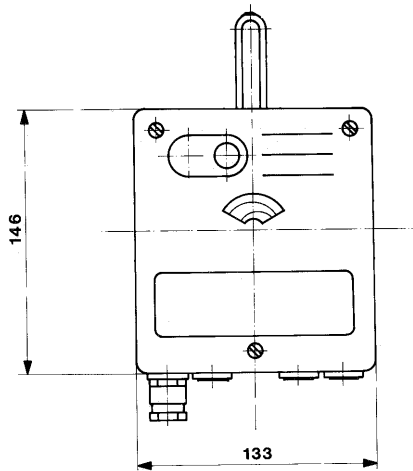
for a signal variable of 100 % connect to terminal 4

for a signal variable of 0 % connect to terminal 2

(⊖) system ground or ground wire.

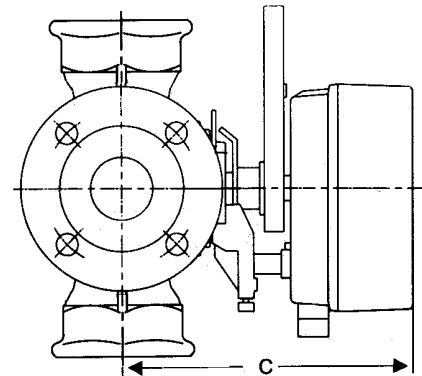
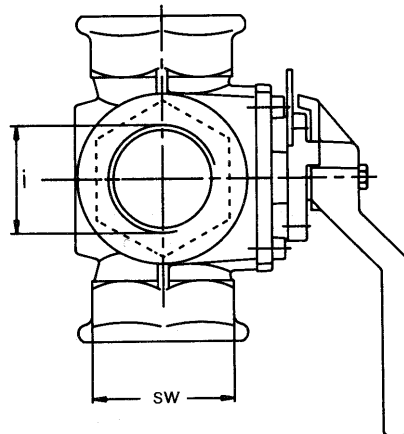
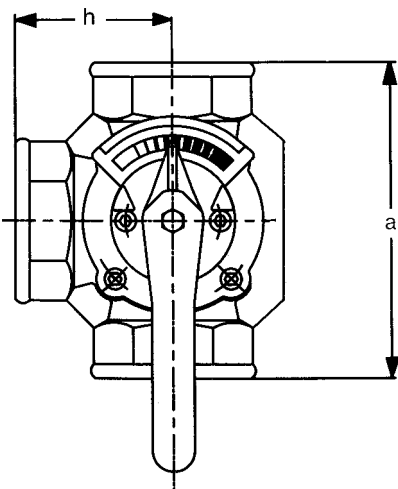


Dimensions (mm)



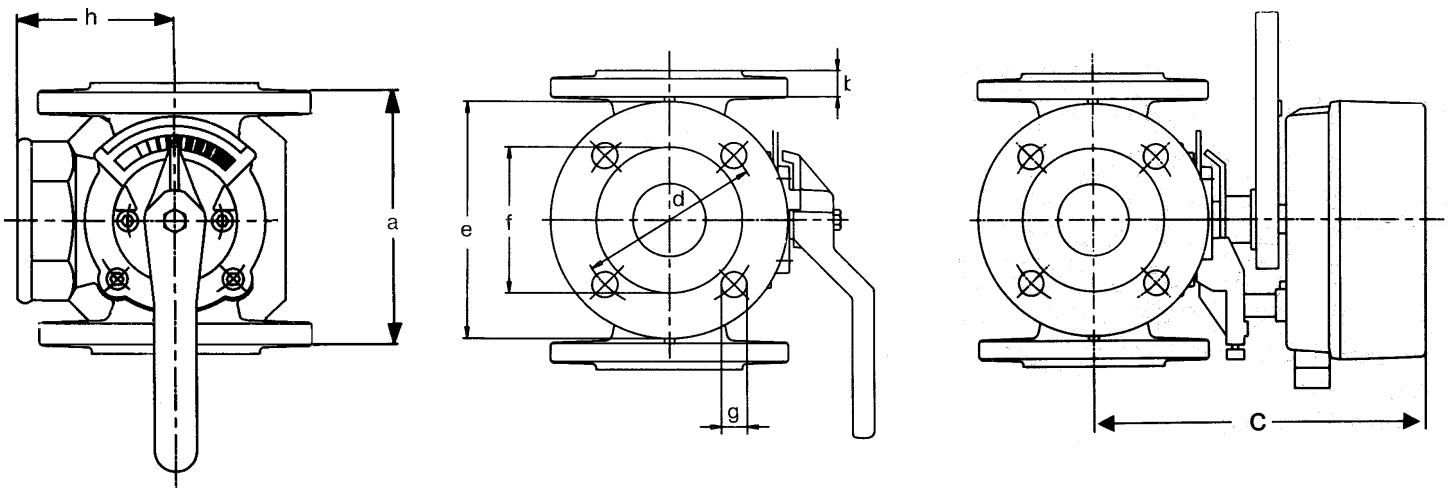
Dimensions with V5431A (mm)

| 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 |



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