

## Pneumatic actuators and valves

### Pneumatic actuators

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# Pneumatic actuators

Pneumatic actuators from SAUTER achieve high pushing forces, enabling fast control. They accurately control dampers or valves with a minimum air requirement. The automatic coupling of the actuators enables fast assembly times.

## Overview of pneumatic actuators



Type designation	AK31 P	AK41...43 P	AVP 142	AVP 242...244
<b>Technical data</b>				
Control pressure (bar)	0...1.2	0...1.2	0...1.2	0...1.2
Effective area (cm <sup>2</sup> )	30	40...160	180	180...500
Maximum pressure (bar)	1.5	1.5	1.5	1.5
<b>Certification</b>				
Explosion protection as per ATEX certification	•	• (AK41 P)	–	–
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## AK31 P: Pneumatic actuator



AK31P\*F001



### Features

- Conformity tested as per EN 13463-1 and EN 1127-1 (potentially explosive atmosphere 1 II 2 G T6)
- Rolling diaphragms made of silicone; drive spindle in stainless steel with M8 male thread
- Plug nipple for connecting plastic tubing with an internal diameter of 4 mm

### Technical data

#### Parameters

Control pressure <sup>1)</sup>	0...1.2 bar
Maximum pressure	1.5 bar
Effective area	30 cm <sup>2</sup>
Stroke	50 mm
Lever length for 90°	35 mm
Running time for 100% stroke <sup>2)</sup>	5 s

#### Ambient conditions

Admissible ambient temperature	-5...60 °C
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#### Construction

Housing material	Fire-retardant plastic
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#### Standards and directives

Type of protection	IP20
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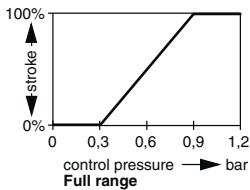
### Overview of types

**i** Admissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased actuating force required to overcome the slat seals must be taken into account for tightly sealed air dampers in accordance with DIN 1946

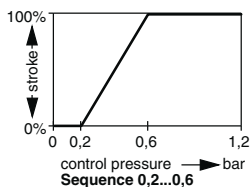
Type	AK31P1F001	AK31P2F001	AK31P3F001
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.3...0.9 bar
Pushing force at 0 bar	70 N	40 N	160 N
Pushing force at 1.2 bar	70 N	160 N	40 N
Torque 0 bar	1.8 Nm	1 Nm	4 Nm
Torque 1.2 bar	1.8 Nm	4 Nm	1 Nm
Admissible damper surface area	0.6 m <sup>2</sup>	0.3 m <sup>2</sup>	0.3 m <sup>2</sup>
Air consumption for 100% stroke	0.3 l <sub>n</sub>	0.2 l <sub>n</sub>	0.2 l <sub>n</sub>
Weight	0.3	0.32	0.32

### Accessories

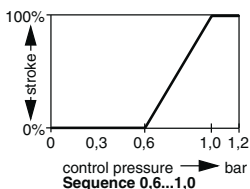
Type	Description
0274587000	Fixing bracket
0274589000	Straight ball joint with 2 nuts (M8)
0274593000	Angled ball joint with 2 nuts (M8)
0370039000	Coupling nut (M8), 2 lock nuts (M8)
0370040000	Threaded rod (M8), length 500 mm
0370059000	Clamping lever for shaft, Ø 8...18 mm



AK31P1F001



AK31P2F001



AK31P3F001



<sup>1)</sup> Required to achieve the actuating power; for regulations concerning the quality of the supply air, particularly at low ambient temperatures, see [www.sauter-controls.com/en/pneumatic\\_plants](http://www.sauter-controls.com/en/pneumatic_plants)

<sup>2)</sup> Based on the centair air flow rate (400 l<sub>n</sub>/h) and a supply line with a length of 20 m and a diameter of 4 mm

## AK 41...43 P: Pneumatic actuator

### Features

- ATEX-certified for use in areas of zone 1 where there is a risk of explosions
- Compliant with EN 13463-1 and EN 1127-1 (Ex II 2 G T6) with actuators of the AK 41 P and AK 42 P series
- Rolling diaphragms made of silicone; drive spindle in stainless steel with M8 male thread
- Plug nipple for connecting plastic tubing with an internal diameter of 4 mm (AK41)
- Compressed-air connection with Rp $\frac{1}{8}$ " female thread (AK42, 43)

### Technical data

#### Parameters

Control pressure	0...1.2 bar
Maximum pressure	1.5 bar

#### Ambient conditions

Admissible ambient temperature <sup>1)</sup>	-10...70 °C
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#### Construction

Housing material	Fire-retardant thermoplastic (AK41, 42), light metal (AK43)
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#### Standards and directives

Type of protection	IP20
Conformity	Directive 97/23/EC Art. 3.3 for pressure equipment

### Overview of types

**i** Admissible damper surface area: Recommended value for equal-sided, smooth-running air dampers. The increased actuating force required to overcome the slit seals must be taken into account for tightly sealed air dampers in accordance with DIN 1946

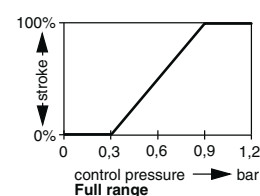
**i** Running time for 100% stroke: Based on the centair air flow rate (400 l<sub>n</sub>/h) and a supply line with a length of 20 m and a diameter of 4 mm

Type	AK41P1F003	AK41P2F003	AK41P3F003	AK42PF003	AK43PF002
Working pressure range	0.3...0.9 bar	0.2...0.6 bar	0.6...1.0 bar	0.3...0.9 bar	0.3...0.9 bar
Pushing force at 0 bar	100 N	60 N	200 N	200 N	400 N
Pushing force at 1.2 bar	100 N	200 N	60 N	200 N	400 N
Torque 0 bar	3 Nm	2 Nm	6 Nm	10 Nm	20 Nm
Torque 1.2 bar	3 Nm	6 Nm	2 Nm	10 Nm	20 Nm
Admissible damper surface area	1 m <sup>2</sup>	0.6 m <sup>2</sup>	0.6 m <sup>2</sup>	3 m <sup>2</sup>	6 m <sup>2</sup>
Stroke	63 mm	63 mm	63 mm	100 mm	100 mm
Effective area	40 cm <sup>2</sup>	40 cm <sup>2</sup>	40 cm <sup>2</sup>	80 cm <sup>2</sup>	160 cm <sup>2</sup>
Air consumption for 100% stroke	0.5 l <sub>n</sub>	0.4 l <sub>n</sub>	0.5 l <sub>n</sub>	1.7 l <sub>n</sub>	3.5 l <sub>n</sub>
Running time for 100% stroke	7 s	6 s	7 s	20 s	35 s
Explosion protection	•	•	•	•	–
Lever length for 90°	40 mm	40 mm	40 mm	70 mm	70 mm
Weight	0.55 kg	0.55 kg	0.6 kg	1.4 kg	4.8 kg

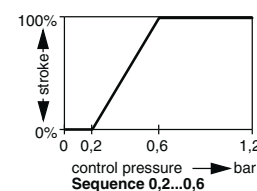
<sup>1)</sup> When used in fresh air ducts, temporarily -20 °C



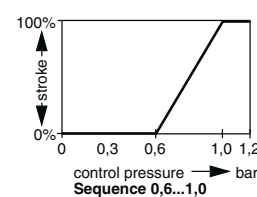
AK42PF003



AK41...43 P



AK41P2F003



AK41P3F003

