

XSP: Pneumatic positioner

How energy efficiency is improved

Enables precise control of energy consumption using pneumatic actuators.

Areas of application

Can be used in combination with pneumatic actuators AK41 - 43 P and valve actuators AV43, AVP 142 plus AVP242 - 244.

Features

- Conversion of a continuous output signal into a defined position on the pneumatic drive
- The use of a positioner provides increased setting accuracy, range partition, changing direction of travel and an increase in positioning speed
- Housing of light-metal alloy
- Compressed-air connections with Rp 1/8" female thread
- Measuring connection for output pressure with M4 thread
- Measuring valve stroke using a measuring spring
- Complies with directive 97/23/EC Art. 3.3

Technical description

- Supply pressure 1.3 bar $\pm$ 0.1
- Linearity 1%

Type	Description	Setting ranges in bar zero span	Weight kg
XSP 31 F001	fitted with cover	0,2...1,0 0,2...1,0	0,1
Supply pressure ¹⁾	1,3 bar $\pm$ 0,1	Connection diagram	A01666
Max. control pressure	1,4 bar	Dimension drawing XSP 31	M274956
Max. air capacity	1000 I _n /h	Fitting instructions	
Air consumption	approx. 30 I _n /h	XSP 31 on AVP 142, AV43 P	MV 43143
Linearity	approx. 1%	XSP 31 on AVP 242...244	MV 506039
		XSP 31 on AK41...43	MV 506088
Perm. ambient temperature	0...70 °C		

Accessories

0274553 000 Restrictor Ø 0,7 mm for reducing the air capacity when the supply pressure is low.
 Assembly material: see drive data sheet, Section 71.

¹⁾ See Section 60 on regulations concerning the quality of supply air, especially at low ambient temperatures.

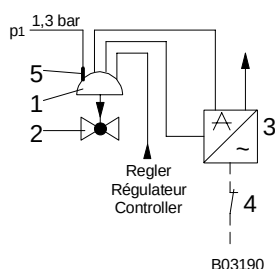
Operation

In the steady-state condition, the forces acting on the double-armed lever (measuring spring, input pressure and zero-point pressure) cancel each other out. If an imbalance arises (by a change in input pressure or in stroke), then the control element is activated, thereby changing the pressure in the drive until the balance is restored (force-compensation principle) via the stroke and the measuring spring. Stroke measurement on the XSP 31 is effected via a spring.

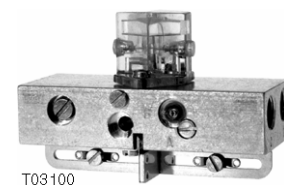
Engineering notes

Fitting pneumatic drives with the XSP 31 to valves with push-type plug (non-Sauter types)

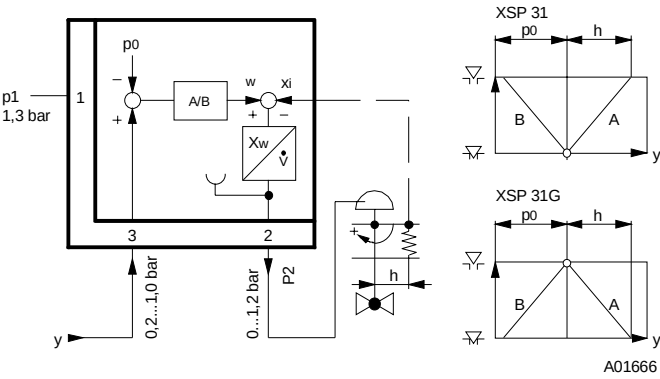
If there is a necessity for the valve to close when the drive is not under pressure, and if the supply pressure can be switched off either due to a power failure or by a limiter, then an electro-pneumatic relay must be fitted between drive and positioner. This ensures that, whenever the supply pressure is switched off, the valve is closed by spring pressure within seconds (emergency function).



- 1) pneumatic drive, AV42 P10, function A
- 2) non-Sauter valve, normally closed
- 3) electro-pneumatic relay, RUEP
- 4) mains monitor
- 5) pneumatic positioner, XSP 31



Connection diagram



Dimension drawing

