XSP: Pneumatic positioner


Y02665

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 ± 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 ± 0,1	Connection diagram	A01666
Max. control pressure	1,4 bar	Dimension drawing XSP 31	M274956
Max. air capacity	1000 l_n/h		
Air consumption	approx. 30 l_n/h	Fitting instructions	
Linearity	approx. 1%	XSP 31 on AVP 142, AV43 P	MV 43143
		XSP 31 on AVP 242…244	MV 506039
Perm. ambient temperature	0...70 °C	XSP 31 on AK41...43	MV 506088

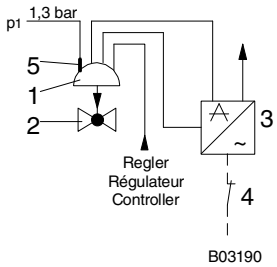
Accessories
0274553 000 Restrictor Ø 0,7 mm for reducing the air capacity when the supply pressure is low.
. . . . . Assembly material: see drive data sheet, Section 71.

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.

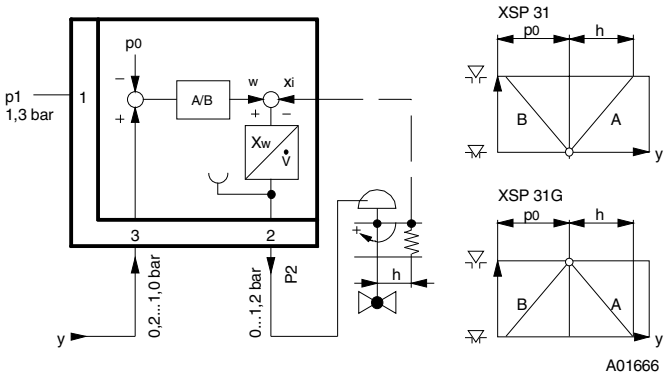
Engineering notes
Fitting pneumatic drives with the XSP 31 to valves with push-type plug (non-Sauter types)

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