

XSP 31/31G: Pneumatic positioner

Used to convert a continuous positioning signal y into the defined position of a pneumatic actuator (AK41 - 43 P) and valve drive (AVP142; AV43...45 P). The positioner's capabilities: increases the positional accuracy; divides up the positioning range (e.g. sequence); changes the direction of operation; increases the positional speed. Conforms to the regulations on pressure equipment (97/23/EG Art. 3.3).

Housing of light alloy; with two diaphragm cells and integrated pressure adjuster for setting the zero point; double-armed lever for matching the unit to the type of drive and for setting the control span; control element of plastic; measuring connection M4 for the output pressure; compressed-air connection Rp 1/8, female thread. Fitted directly onto the drive using the assembly material (accessory).

Type	Description	Setting ranges (bar)		Gewicht kg
		zero	span	
XSP 31 F001	fitted with cover	0.2...1.0	0.2...1.0	0.1
XSP 31G F001	in protective housing	0.2...1.0	0.2...1.0	0.75
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	XSP 31G		M274976
Air consumption	approx. 30 I _n /h	Fitting instructions		
Linearity	approx. 1%	XSP 31 to AV43...45		MV 43143
		XSP 31 to AK41...43		MV 4150
		XSP 31G to AV43...45		MV 4149
Perm. ambient temperature	0...70 °C			
Degree of protection, XSP 31G	IP 54 (EN 60529)			

Accessories

0274553 000 Restrictor \varnothing 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; on the XSP 31G, it is done via a lever with spring.

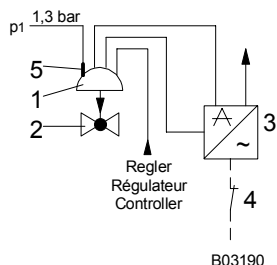
Additional details on XSP 31G

Housing of cast light alloy with integrated XSP 31.
 The XSP 31G can be fitted only to the AV42 - 45 P drives.

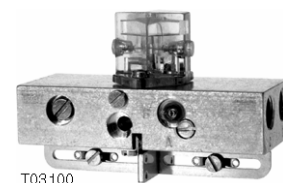
Engineering notes

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

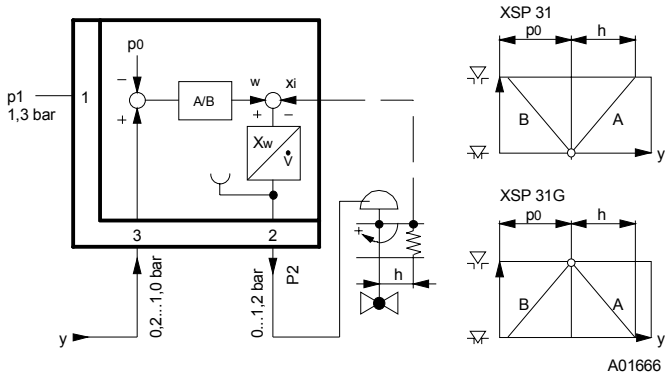
If there is a necessity for the valve to close when the drive is not under pressure, and if the supply pressure can be switched off either due to a power failure or by a limiter, then an electro-pneumatic relay must be fitted between drive and positioner. This ensures that, whenever the supply pressure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

