

## 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     |           | Weight<br>kg            |
|---------------------------|------------------------------|---------------------------|-----------|-------------------------|
|                           |                              | zero                      | span      |                         |
| <b>XSP 31 F001</b>        | fitted with cover            | 0,2...1,0                 | 0,2...1,0 | 0,1                     |
| Supply pressure 1)        | 1,3 bar $\pm$ 0,1            | Connection diagram        |           | <a href="#">A01666</a>  |
| Max. control pressure     | 1,4 bar                      | Dimension drawing XSP 31  |           | <a href="#">M274956</a> |
| Max. air capacity         | 1000 I <sub>n</sub> /h       | Fitting instructions      |           |                         |
| Air consumption           | approx. 30 I <sub>n</sub> /h |                           |           |                         |
| Linearity                 | approx. 1%                   | XSP 31 on AVP 142, AV43 P | MV 43143  |                         |
|                           |                              | 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  $\varnothing$  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.

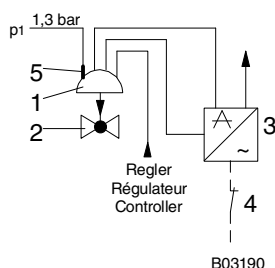
### Operation

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.

### 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).



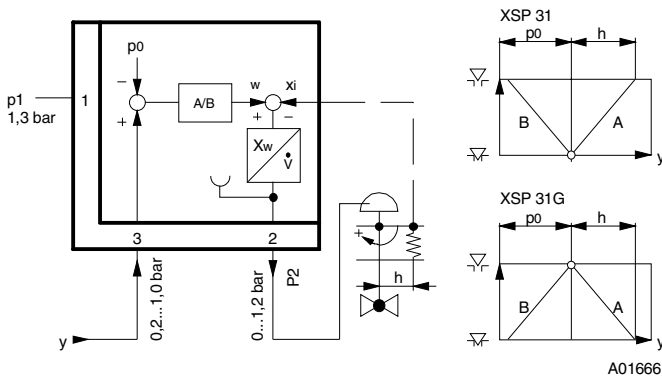
- 1) pneumatic drive, AV42 P10, function A
- 2) non-Sauter valve, normally closed
- 3) electro-pneumatic relay, RUEP
- 4) mains monitor
- 5) pneumatic positioner, XSP 31



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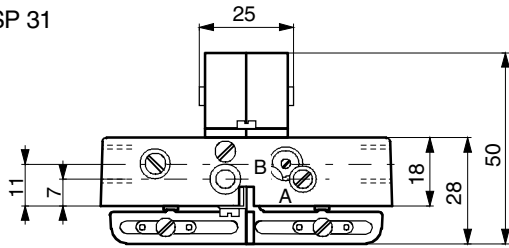
Connection diagram



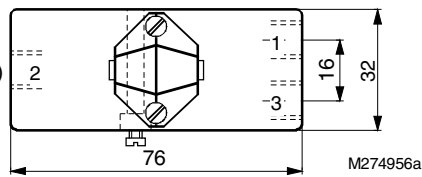
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Dimension drawing

XSP 31



1, 2, 3 =  
Rp 1/8 (ISO 7/1)



M274956a