

# Pneumatic 2-hand control

**Conforms to the Machinery Directive**



## Definition (conforming to EN 574 +A1)

A pneumatic 2-hand control device is used with dangerous machinery and requires the simultaneous use of both hands to trigger and maintain machine operation. Such a device must be located outside the dangerous zone, so that the operator cannot enter this zone before the machine has come to a complete standstill.

A pneumatic 2-hand control device is composed of 2 parts :

- 2 manual pushbuttons which require the simultaneous use of both hands.
- A pneumatic relay.

Types of 2-hand control devices

Requirements	Type				
	I	II	III		
			A	B	C
Use of both hands (simultaneous actuation)	●	●	●	●	●
Relationship between input signals and output signal	●	●	●	●	●
Cessation of the output signal	●	●	●	●	●
Prevention of accidental operation	●	●	●	●	●
Prevention of defeat	●	●	●	●	●
Reinitiation of the output signal		●	●	●	●
Synchronous actuation			●	●	●
Use of category 1 (EN 954-1)	●		●		
Use of category 3 (EN 954-1)		●		●	
Use of category 4 (EN 954-1)					●

- Category 1 (EN ISO 13849) :** the system should use well tried components and principles.
- Category 3 (EN ISO 13849) :** the system must be designed so that a single fault will not cause the loss of the safety function.
- Category 4 (EN ISO 13849):** the system must be designed so that an accumulation of faults must not lead to a loss of the safety function.

## Synchronous action

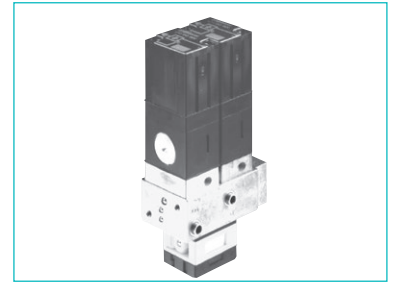
An output signal is only generated if both control actuating devices are actuated within 500 ms.

## Resetting the output signal

The release of a single control device interrupts the output signal, but a reset is only possible once both control devices have been released.

# Pneumatic relay for two-hand control

- › 100% pneumatic
- › Complies with Machinery Directive and the standard EN 574 +A1
- › CE Certification type-IIIA and IIIB

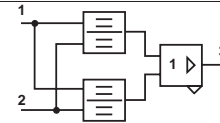


Pneumatic relay for two-hand control  
EN 574 +A1 classification

**81 580 101**  
III A

**81 580 202**  
III B

## Symbol

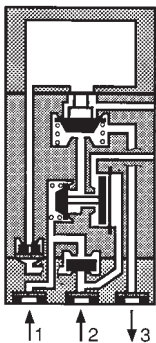


## Characteristics

Operating pressure	bar	2 → 8	2 → 8
Orifice diameter	mm	2.5	2.5
Max. delay between input signals	s	0.2 max.	0.2 max.
Connection		Sub-base 81 532 001	Semi-rigid tubing Ø 4 (NFE 49100)
Operating temperature	°C	-5 → +50	-5 → +50
Mechanical life	operations	10 <sup>7</sup>	10 <sup>7</sup>
Weight	g	90	320

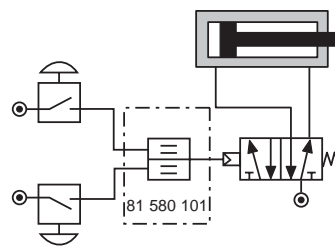
## Principle of operation

**81 580 101**



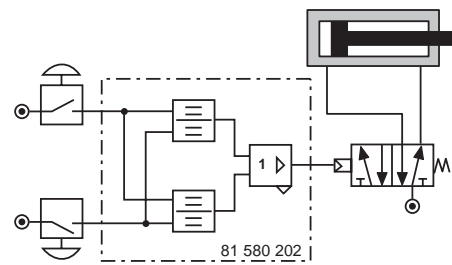
## Connections (Typical application with double-acting cylinder)

**81 580 101**



Components follow current standards

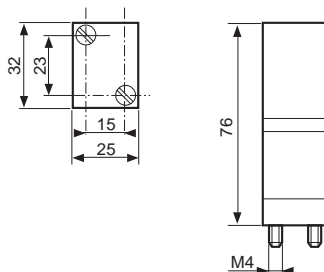
**81 580 202**



To obtain an output signal it is necessary to give simultaneous input signals 'a' and 'b' with a max. delay of 0.45. The output signal 's' is lost if one or both of the inputs are removed.

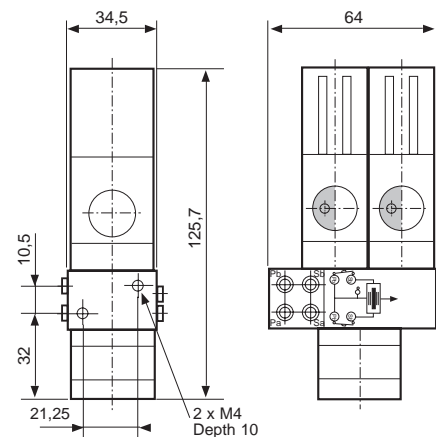
## Dimensions

**81 580 101**



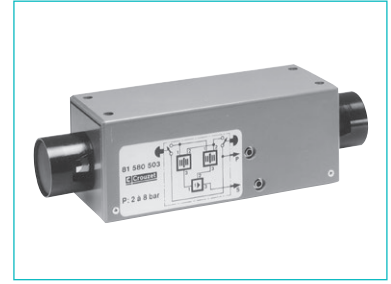
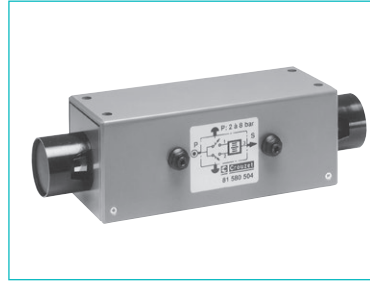
Mounted on sub-base 81 532 001  
(See page 55 of Pneumatics catalogue)

**81 580 202**



# Two-hand pneumatic safety start module

- › Conforms to the Machinery Directive and standard EN 574
- › Including pneumatic relay to classification IIIA or IIIB depending on version

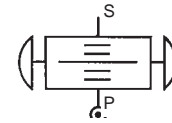
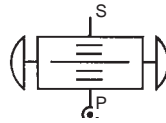


Two-hand pneumatic safety start module  
Pneumatic relay (to EN 574)

**81 580 504**  
Type III A

**81 580 503**  
Type III B

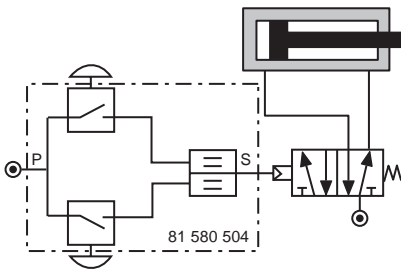
## Symbol



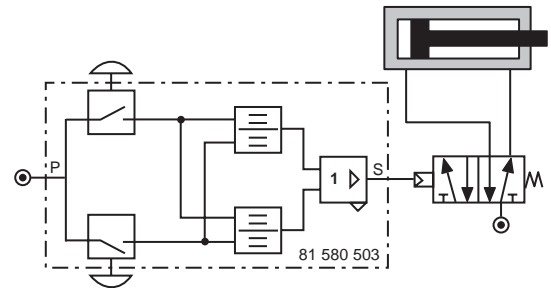
## Characteristics

Operating pressure	bar	2 → 8	2 → 8
Orifice diameter	mm	2.5	2.5
Max. delay between input signals	s	0.2 max.	0.2 max.
Connection		Semi-rigid tubing Ø 4 (NFE 49100)	Semi-rigid tubing Ø 4 (NFE 49100)
Operating temperature	°C	-5 → +50	-5 → +50
Mechanical life	operations	1.5 x 10 <sup>6</sup>	1.5 x 10 <sup>6</sup>
Weight	g	1000	1410

**Connections** (Typical application with double-acting cylinder)  
**81 580 504**



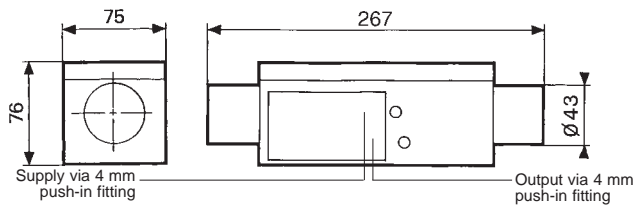
**81 580 503**



Components follow current standards

## Dimensions

**81 580 503 - 81 580 504**



Fixing viewed from below

