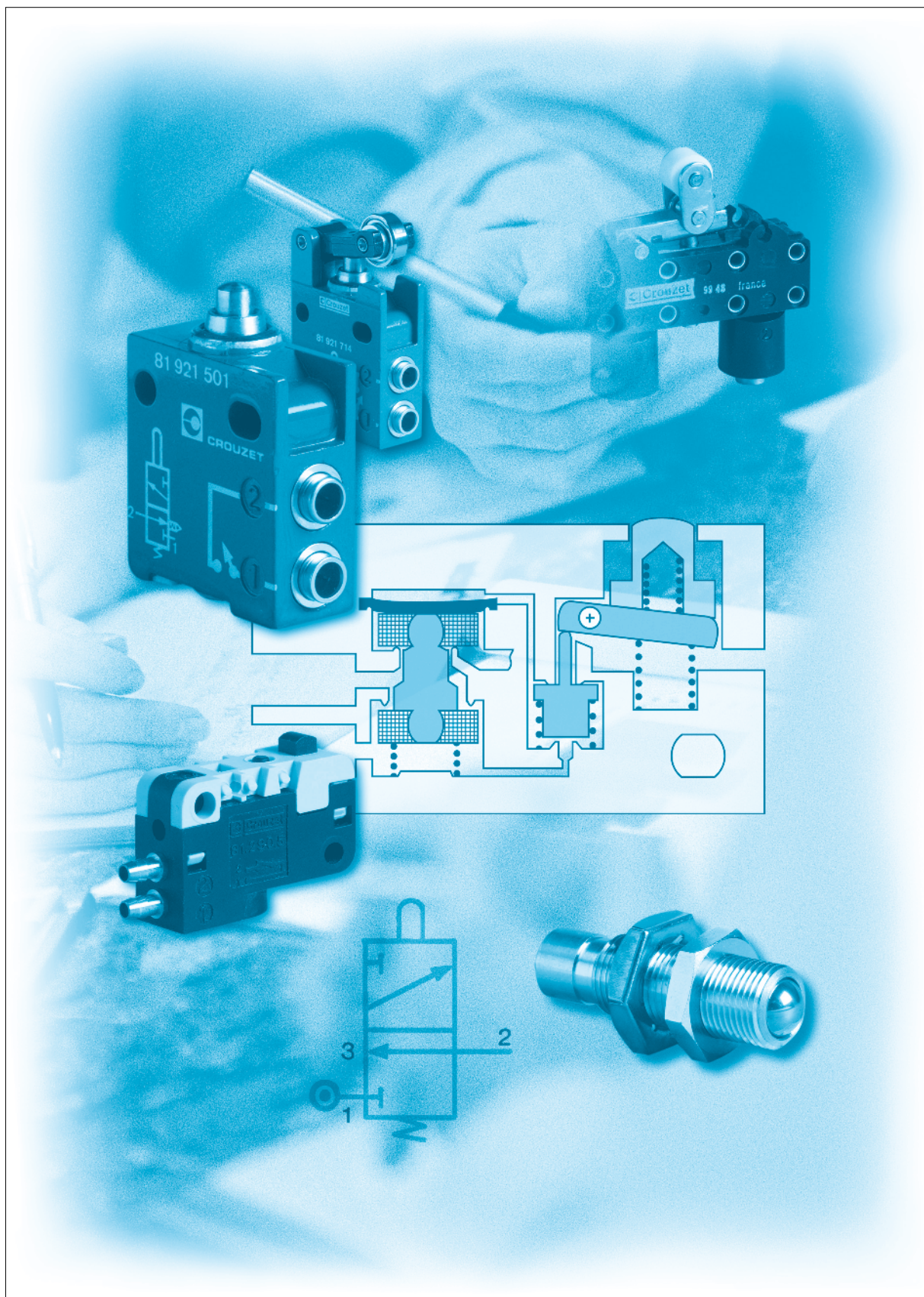


# Position detectors



# Pressure decay sensor

■ 100 % pneumatic



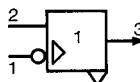
Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



Pressure decay sensor

81 504 025

## Symbol

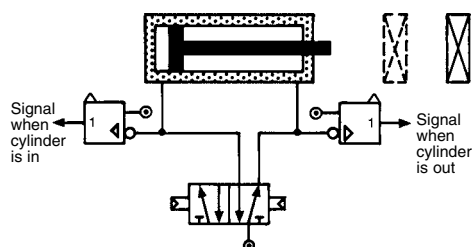


## Characteristics

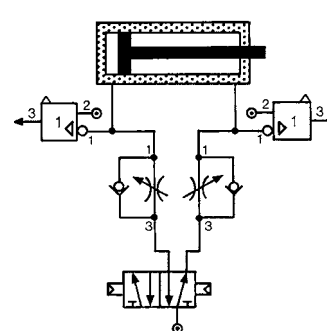
|                                  |            |                     |
|----------------------------------|------------|---------------------|
| Operating pressure               | bar        | 2 → 8               |
| Flow at 6 bars                   | NI/min     | 200                 |
| Tripping point with 6 bar supply | b          | 0.3                 |
| Connection                       |            | Sub-base page 54-55 |
| Operating temperature            | °C         | -5 → +50            |
| Mechanical life                  | operations | ≥10 <sup>7</sup>    |
| Weight                           | g          | 25                  |

## Connections

Without flow restrictor



With flow restrictor

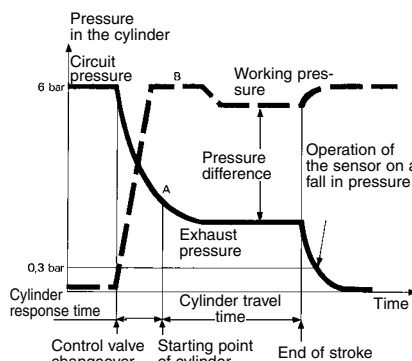


## Principle of operation

Fitted in-line between the cylinder and the control valve, the sensor will give an output when the pressure in this line is exhausted and the cylinder is at end of stroke.

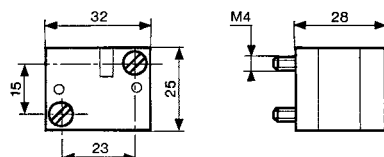
For the correct usage of sensors on a falling pressure, it is recommended that the practical cylinder load is limited to 60% of the theoretical force.

Evolution of pressure within a double-acting cylinder



## Dimensions

81 504 025



ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website [www.crouzet.com](http://www.crouzet.com)

# Low force position detector

- 100 % pneumatic
- Conforme à la norme DIN 41365 Forme A
- Faible effort d'actionnement < 50 g à 6 bars
- Pas de consommation permanente d'air comprimé



Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



Function

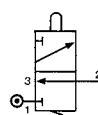
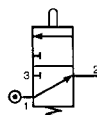
NO

NC

81 290 501

81 290 001

Symbol

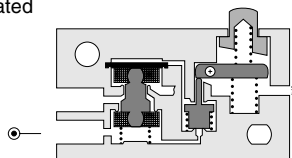


## Characteristics

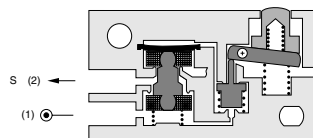
|                                       |           |                 |                 |
|---------------------------------------|-----------|-----------------|-----------------|
| Orifice diameter                      | mm        | 2               | 2               |
| Operating pressure                    | bar       | 3 → 8           | 3 → 8           |
| Flow at 4 bars                        | NI/min    | 100             | 100             |
| Activation force at 6 bars            | N         | < 0,5           | < 0,5           |
| Permissible fluids (air / inert gas)  |           | ●               | ●               |
| Max/min of fluid temperatures         | °C        | -10 → +50       | -10 → +50       |
| operating                             | °C        | -10 → +60       | -10 → +60       |
| storage                               | °C        | -40 → +70       | -40 → +70       |
| Mechanical life at 6 bars             | operation | 10 <sup>7</sup> | 10 <sup>7</sup> |
| Response on activation                | ms        | ≤ 15            | ≤ 15            |
| time on release                       | ms        | ≤ 15            | ≤ 15            |
| Barb connection for semi-rigid tubing |           | 2.7 x 4         | 2.7 x 4         |
| Weight                                | g         | 8.5             | 8.5             |

## Principle of operation NC

Desactivated



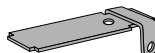
Activated



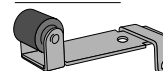
## Operation accessories

Unless otherwise requested, flat and roller-ended levers are supplied loose.

161 A  
flat R 25.4  
70 507 524



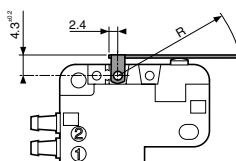
161 E  
with roller R 24.1  
70 507 529



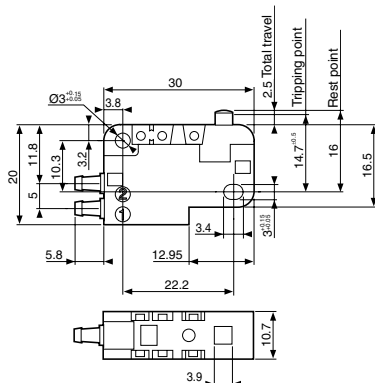
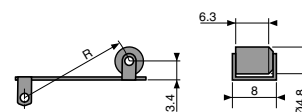
## Dimensions

DIN 41365 Form A

161 A  
R 25.4 ±0,2



161 E  
R 24.1 ±0,2



ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website [www.crouzet.com](http://www.crouzet.com)

## “Microvalve” series position detectors

■ 100 % pneumatic



81 280



81 281

|          |    |                   |                 |                          |
|----------|----|-------------------|-----------------|--------------------------|
| Version  | NO | 81 280 010        | 81 281 010      | —                        |
|          | NC | 81 280 510        | 81 281 510      | 81 283 510               |
| Features |    | Horizontal output | Vertical output | Rear connection by screw |

### Symbol

NO



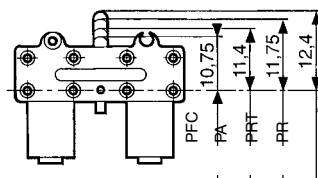
NC



### Characteristics

|                                                      |         |                     |                     |                     |
|------------------------------------------------------|---------|---------------------|---------------------|---------------------|
| Operating pressure                                   | bar     | 2 → 8               | 2 → 8               | 2 → 8               |
| Orifice diameter                                     | mm      | 2.7                 | 2.7                 | —                   |
| Flow at 6 bars                                       | NI/min  | 200                 | 200                 | 138                 |
| Operating force at 6 bars                            | N       | 15                  | 15                  | 15                  |
| Effective travel                                     | mm      | 1                   | 1                   | 1                   |
| Push-in connection for semi-rigid tubing (NFE 49100) | mm      | Ø 4                 | Ø 4                 | Ø 4                 |
| Operating temperature                                | °C      | -5 → +50            | -5 → +50            | -5 → +50            |
| Mechanical life                                      | operat. | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> |
| Weight                                               | g       | 14                  | 14                  | 20                  |

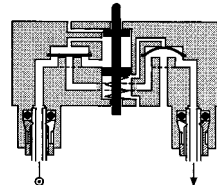
### Principle of operation



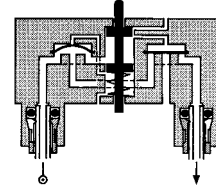
Actuation positions :

PFC : End of travel position  
PA : Operating position (max output kV)  
PRT : Release position (max. exhaust kV)  
PR : Rest position

NC

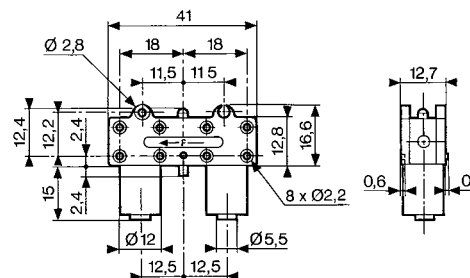


NO

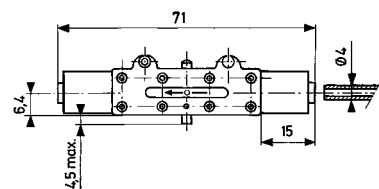


### Dimensions

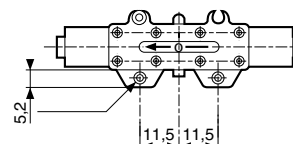
81 281 010 - 81 281 510



81 280 010 - 81 280 510



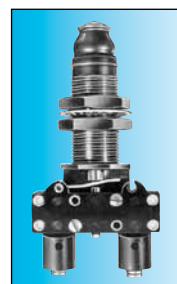
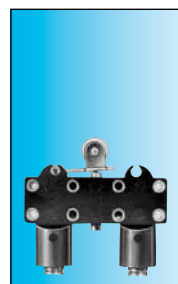
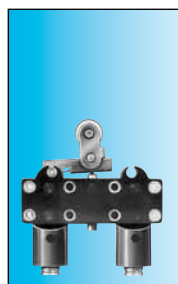
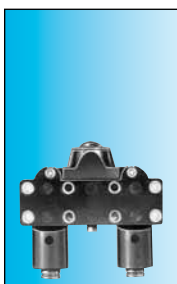
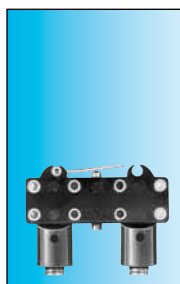
81 283 510





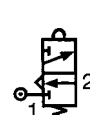
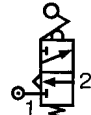
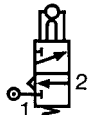
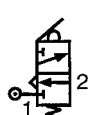
## “Microvalve” series position detectors

■ 100 % pneumatic



| Features |    |                 | Short lever | With ball  | Roller trip | With roller | Threaded barrel Ø 16<br>Plunger |
|----------|----|-----------------|-------------|------------|-------------|-------------|---------------------------------|
| Version  | NC | Vertical output | 81 281 502  | 81 281 504 | 81 281 508  | 81 281 509  | 81 737 501                      |

### Symbol

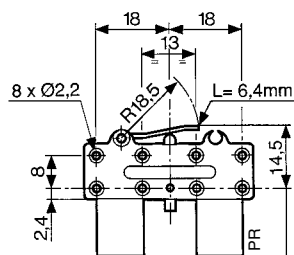


### Characteristics

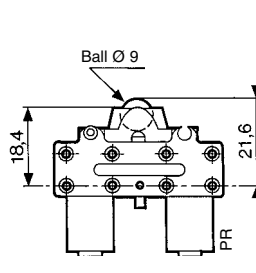
|                                                      |         |                     |                     |                     |                     |                     |
|------------------------------------------------------|---------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Operating pressure                                   | bar     | 2 → 8               | 2 → 8               | 2 → 8               | 2 → 8               | 2 → 8               |
| Orifice diameter                                     | mm      | 2.7                 | 2.7                 | 2.7                 | 2.7                 | 2.7                 |
| Flow at 6 bars                                       | NI/min  | 200                 | 200                 | 200                 | 200                 | 200                 |
| Operating force at 6 bars                            | N       | 15                  | 15                  | 15                  | 15                  | 25                  |
| Effective travel                                     | mm      | 1                   | 1                   | 1                   | 1                   | 1                   |
| Push-in connection for semi-rigid tubing (NFE 49100) | mm      | Ø 4                 | Ø 4                 | Ø 4                 | Ø 4                 | Ø 4                 |
| Operating temperature                                | °C      | -5 → +50            | -5 → +50            | -5 → +50            | -5 → +50            | -5 → +50            |
| Mechanical life                                      | operat. | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> | 5 x 10 <sup>6</sup> |
| Weight                                               | g       | 16                  | 18                  | 18                  | 18                  | 90                  |

### Dimensions

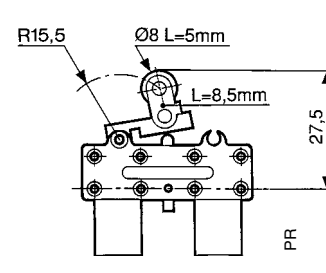
81 281 502



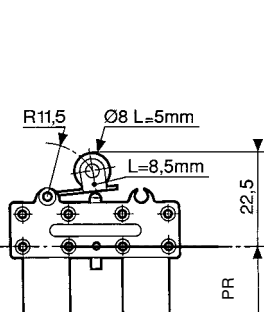
81 281 504



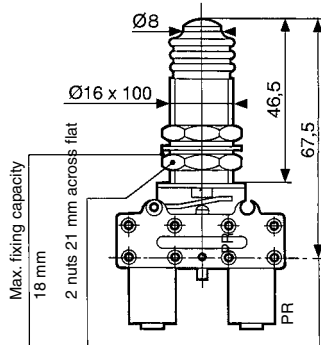
81 281 508



81 281 509



81 737 501



Actuation positions :  
PR : Rest position

## "Miniature" series position detectors

- 100 % pneumatic
- All metal

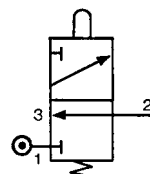


### Part numbers

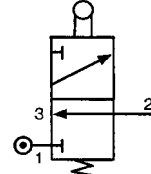
|         |                                                      |                |                                        |                           |
|---------|------------------------------------------------------|----------------|----------------------------------------|---------------------------|
| Version | Push-in connection for semi-rigid tubing (NFE 49100) |                |                                        |                           |
|         | Ø 4 silenced exhaust                                 | 81 921 501     | 81 921 701                             | 81 921 702                |
| NC      | M5 connectable exhaust                               | —              | —                                      | —                         |
|         | Ø 4 connectable exhaust *                            | —              | —                                      | —                         |
|         | Ø 6 connectable exhaust *                            | —              | —                                      | —                         |
| NO      | Ø 4 silenced exhaust                                 | —              | —                                      | —                         |
|         | Ø 6 silenced exhaust                                 | —              | —                                      | —                         |
| Control |                                                      | Simple plunger | Lever with plastic roller              | Lever with roller bearing |
|         |                                                      |                | Lever with one-way trip plastic roller |                           |

### Symbol

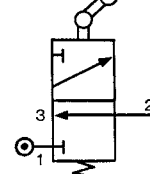
NC



NC



NC

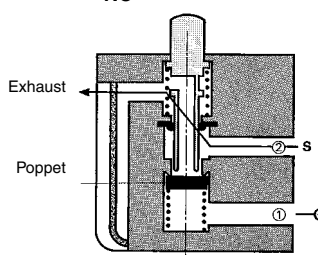


### Characteristics

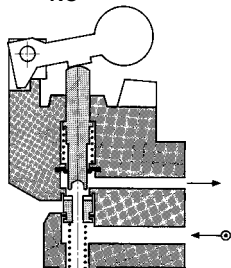
|                           |            |                  |                  |                  |                  |
|---------------------------|------------|------------------|------------------|------------------|------------------|
| Operating pressure        | bar        | 0.1 → 8          | 0.1 → 8          | 0.1 → 8          | 0.1 → 8          |
| Orifice diameter          | mm         | 2.7              | 2.7              | 2.7              | 2.7              |
| Flow at 6 bars            | NI/min     | 200              | 200              | 200              | 200              |
| Actuation force at 6 bars | N          | 18               | 18               | 18               | 18               |
| Circuit function : NC     |            | —                | —                | —                | —                |
| Circuit function: NO      |            | —                | —                | —                | —                |
| Connectable exhaust       |            |                  |                  |                  |                  |
| Operating temperature     | °C         | -5 → +50         | -5 → +50         | -5 → +50         | -5 → +50         |
| Mechanical life           | operations | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> |
| Weight                    | g          | 62               | 75               | 80               | 77               |

### Principle of operation

NC



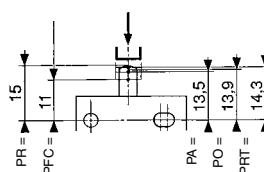
NO



### Actuation travel

Vertical attack

Simple plunger

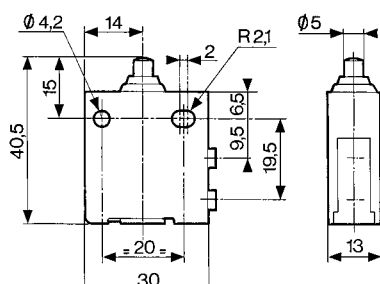


### Actuation positions :

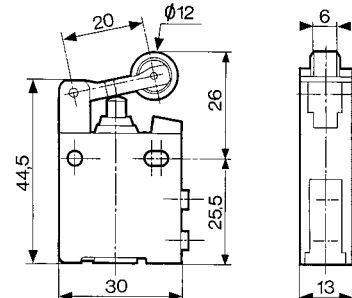
- PA : Operating position (max output kV)
- PFC : End of travel position
- PO : Mid-position closed (no exhaust, no outlet)
- PRT : Release position (max exhaust kV)
- PR : Rest position

### Dimensions

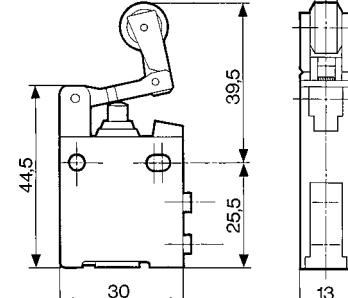
81 921 501



81 921 701 - 81 921 702

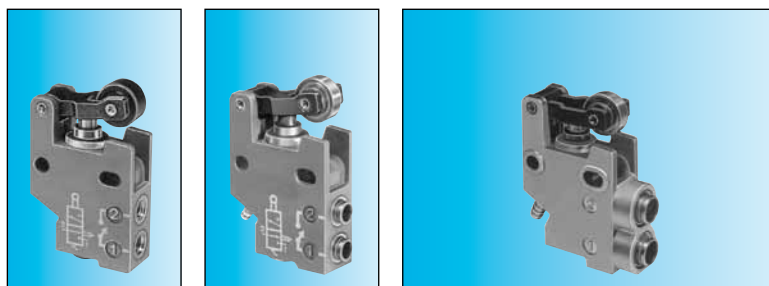


81 921 707

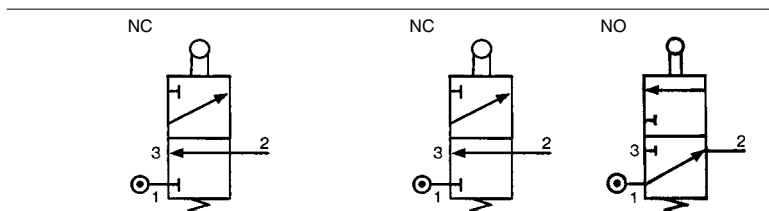


\* with barb for tube Ø 2.7 x 4

Material: body zamak



|                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| —                         | —                         | —                         | —                         |
| 81 921 806                | 81 921 714                | 81 921 719                | 81 921 717                |
| —                         | —                         | 81 921 911                | 81 921 912                |
| —                         | —                         | 81 921 901                | 81 921 902                |
| Lever with plastic roller | Lever with roller bearing | Lever with plastic roller | Lever with roller bearing |



|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| 0.1 → 8          | 0.1 → 8          | 0.1 → 8          | 0.1 → 8          |
| 2.7              | 2.7              | 2.7              | 2.7              |
| 200              | 200              | 200              | 200              |
| 18               | 18               | 18               | 18               |
| —                | —                | •                | •                |
| —                | —                | •                | •                |
| -5 → +50         | -5 → +50         | -5 → +50         | -5 → +50         |
| ≥10 <sup>7</sup> | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> |
| 75               | 80               | 100              | 100              |

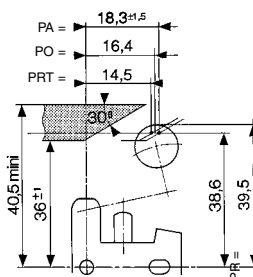
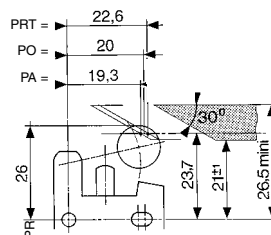
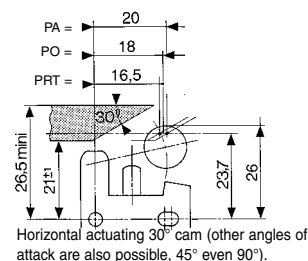
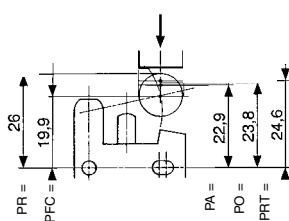
Horizontal actuating 30° cam (other angles of attack are also possible, 45° even 90°).

With lever

With lever

With lever

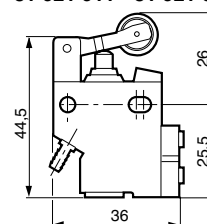
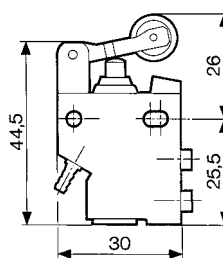
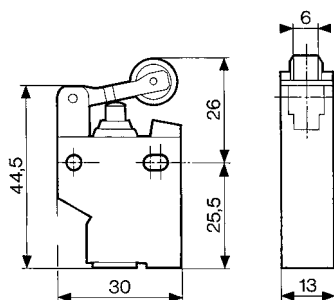
One-way trip lever



81 921 806

81 921 714

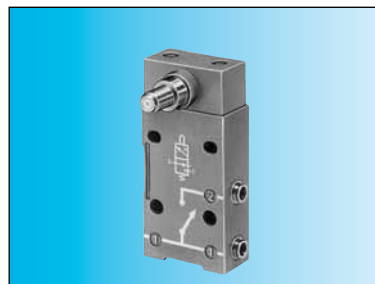
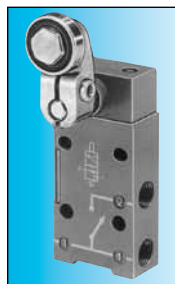
81 921 717 - 81 921 719  
81 921 901 - 81 921 902  
81 921 911 - 81 921 912



Material: body zamak  
Other configuration on demand

## "Compact" series position detectors

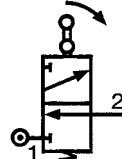
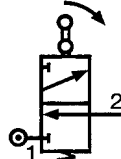
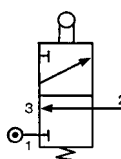
- 100 % pneumatic
- All metal



### Part numbers

| Features | Direct acting<br>81 922 401           | Rotary actuator<br>81 922 205                    | Rotary actuator<br>81 922 010          | Rotary actuator<br>81 922 210          |
|----------|---------------------------------------|--------------------------------------------------|----------------------------------------|----------------------------------------|
| Version  | Roller plunger with unthreaded barrel | Right-hand rotary head with roller lever (CNOMO) | Programmable rotary head without lever | Programmable rotary head without lever |

### Symbol



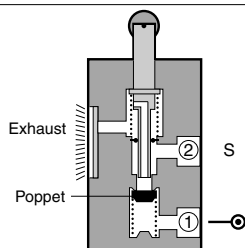
### Characteristics

|                                       |                                           |                   |                   |                   |                   |
|---------------------------------------|-------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| Connection                            | BSP                                       | —                 | 1/8               | —                 | 1/8               |
|                                       | push-in for semi-rigid tubing (NFE 49100) | mm                | Ø 4               | —                 | Ø 4               |
| Operating pressure                    | bar                                       | 0.1 → 8           | 0.1 → 8           | 0.1 → 8           | 0.1 → 8           |
| Bore diameter                         | mm                                        | 3                 | 3                 | 3                 | 3                 |
| Flow at 6 bars                        | Nm³/h                                     | 200               | 200               | 200               | 200               |
| Activation force at 6 bars            | daN                                       | 2.5               | 2.5               | 2.5               | 2.5               |
| Circuit function: NC                  |                                           | •                 | •                 | •                 | •                 |
| Mechanical life                       | operations                                | > 10 <sup>7</sup> | > 10 <sup>7</sup> | > 10 <sup>7</sup> | > 10 <sup>7</sup> |
| Silenced or connectable (1/8) exhaust |                                           | •                 | •                 | •                 | •                 |
| Operating temperature                 | °C                                        | -5 → +50          | -5 → +50          | -5 → +50          | -5 → +50          |
| Weight                                | g                                         | 150               | 193               | 175               | 175               |

### Accessories

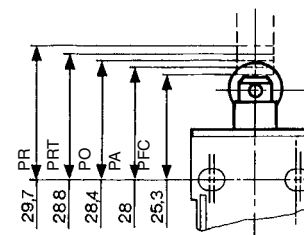
|                              |         |            |   |   |   |   |
|------------------------------|---------|------------|---|---|---|---|
| Lever with roller            | plastic | 79 452 103 | — | • | • | • |
|                              | bearing | 79 452 104 | — | • | • | • |
| Lever with adjustable roller | plastic | 79 452 123 | — | • | • | • |
|                              | bearing | 79 452 124 | — | • | • | • |
| Adjustable steel rod lever   |         | 79 452 133 | — | • | • | • |

### Principle of operation



### Vertical attack

Detectors with roller plunger with unthreaded barrel.



#### Actuation positions :

- PA : Operating position (max output kV)
- PFC : End of travel position
- PO : Mid-position closed (no exhaust, no outlet)
- PRT : Release position (max exhaust kV)
- PR : Rest position

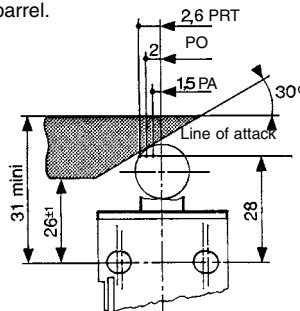
The detectors 81 922 010 and 81 922 210 can operate to both left and right.

**Material: body zamak**

**Other configuration on demand**

### Horizontal attack

Detectors with roller plunger with unthreaded barrel.

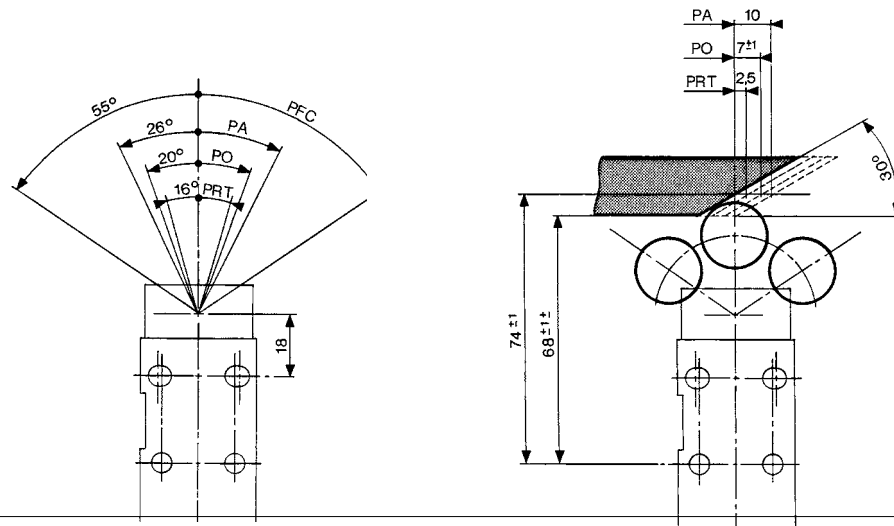




## Rotary actuator

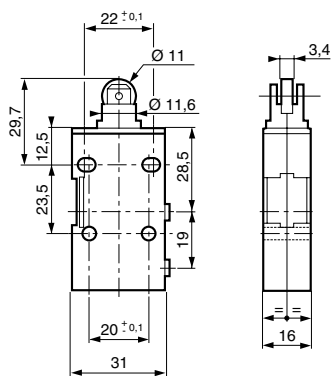
Detectors with levers

81 922 - 81 922 0 - 81 922 2

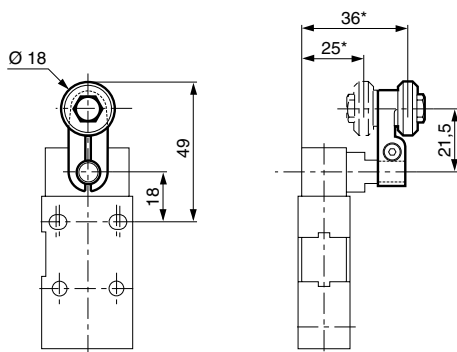


## Dimensions

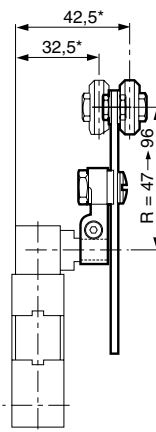
81 922 401



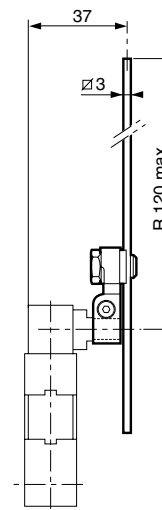
81 922 205 - 81 922 0 - 81 922 2  
79 452 103 - 79 452 104



79 452 123 - 79 452 124

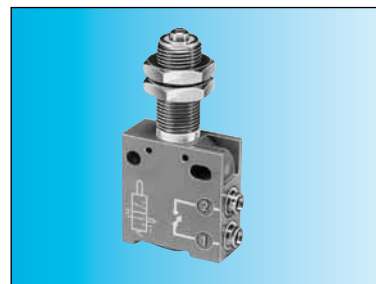
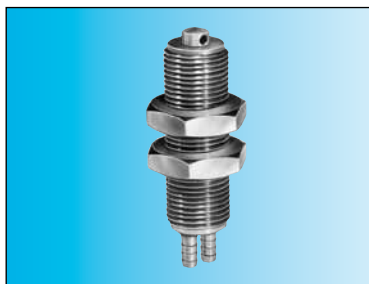


79 452 133



## "Adjustable stop" series position detectors

- 100 % pneumatic
- All metal



### Part numbers

Push-in connection for semi-rigid tubing (NFE 49100)

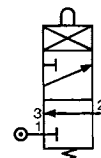
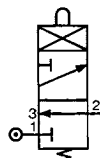
**81 923 001**

Barb for tube 2.7 x 4

**81 921 505**

Push-in connector for tube Ø 4

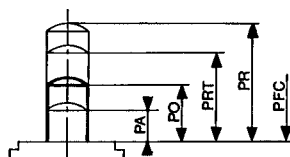
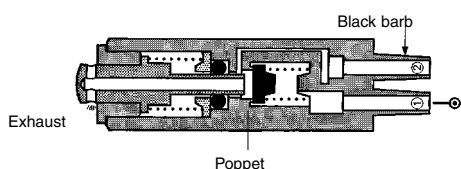
### Symbol



### Characteristics

|                                                     |            |                  |                  |
|-----------------------------------------------------|------------|------------------|------------------|
| Operating pressure                                  | bar        | 0,1 → 8          | 0,1 → 8          |
| Orifice diameter                                    | mm         | 2                | 2,7              |
| Flow at 6 bars                                      | NI/min     | 130              | 200              |
| Actuation force at 6 bars                           | N          | 16               | 21               |
| Circuit function: NC                                |            | ●                | ●                |
| Max. load: without shock                            | daN        | 1000             | 1000             |
| Will stop a 63 mm Ø cylinder : 6 bar supply         |            | ●                | ●                |
| Operating temperature                               | °C         | -5 → +50         | -5 → +50         |
| Mechanical life                                     | operations | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> |
| Weight                                              | g          | 27               | 90               |
| Actuation positions                                 |            |                  |                  |
| PA : Operating position (max output kV)             | mm         | 0,4              | 0,7              |
| PFC : End of travel position                        | mm         | 0                | 0                |
| PO : Mid-position closed<br>(no exhaust, no outlet) | mm         | 0,9              | 1                |
| PRT : Release position<br>(max. exhaust kV)         | mm         | 1,5              | 1,5              |
| PR : Rest position                                  | mm         | 3                | 3                |

### Principle of operation



| Versions  | PO  | PA  | PFC | PRT | PR |
|-----------|-----|-----|-----|-----|----|
| With barb | 0.9 | 0.4 | 0   | 1.5 | 3  |
| Ø 4       | 1   | 0.7 | 0   | 1.5 | 3  |

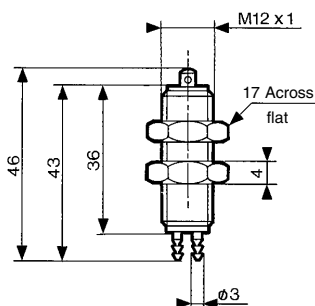
Values in mm

#### Actuation positions :

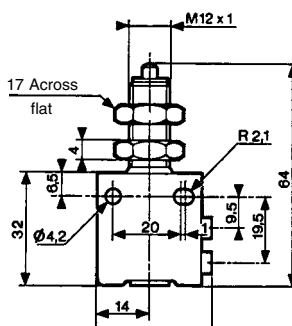
- PA : Operating position (max output kV)
- PFC : End of travel position
- PO : Mid-position closed  
(no exhaust, no outlet)
- PRT : Release position  
(max exhaust kV)
- PR : Rest position

### Dimensions

**81 923 001**

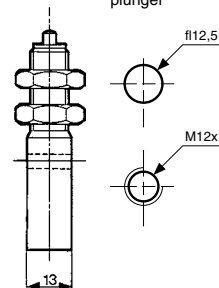


**81 921 505**



### Fixing

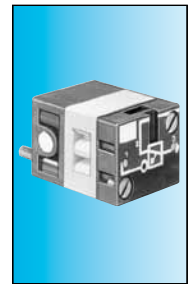
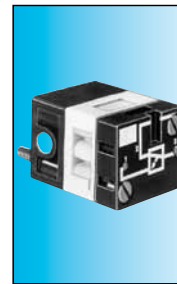
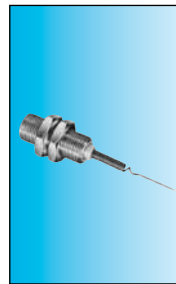
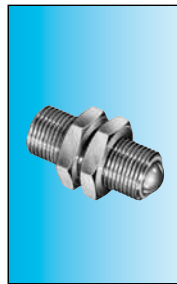
This should be as close as possible to the plunger



**Material: body zamak**

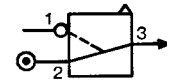
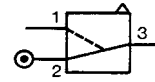
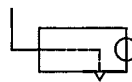
## Position detectors use with relay

- 100 % pneumatic
- All metal
- Low force operation <N 1
- Very low force Version 30 mN



### References

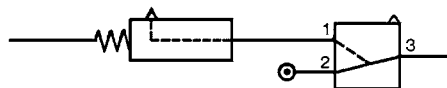
| Version | 81 512 201<br>with ball | 81 512 401<br>with wire | 81 502 435<br>Positive | 81 505 435<br>Negative |
|---------|-------------------------|-------------------------|------------------------|------------------------|
| Symbol  |                         |                         |                        |                        |



### Characteristics

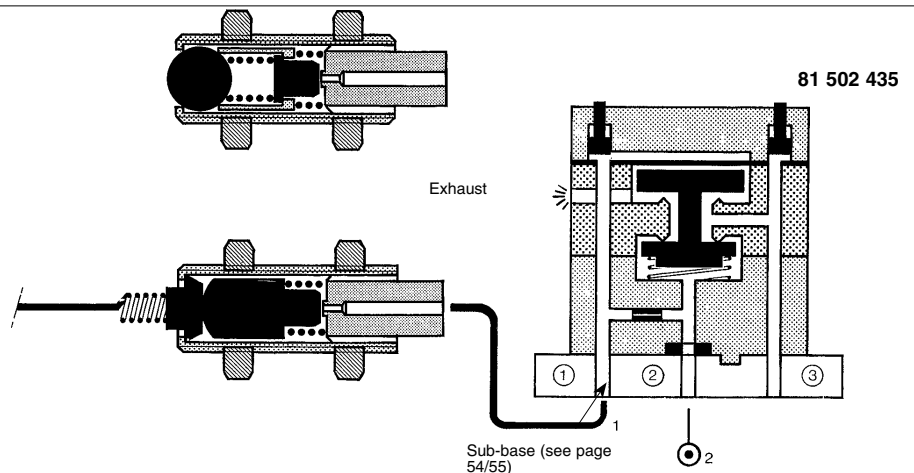
|                                                                                      |            |                 |                 |                  |                  |
|--------------------------------------------------------------------------------------|------------|-----------------|-----------------|------------------|------------------|
| Push-in connection for semi-rigid tubing (NFE 49100)                                 | mm         | Ø 4             | Ø 4             |                  |                  |
| Life at 6 bars                                                                       | operations | 10 <sup>7</sup> | 10 <sup>7</sup> |                  |                  |
| Actuation force at 6 bars                                                            | N          | 0,8             | 0,025           |                  |                  |
| Fluid used: that delivered by the leak sensor relay..                                |            | •               | •               |                  |                  |
| Operating temperature                                                                | °C         | -5 → +50        | -5 → +50        | -5 → +50         | -5 → +50         |
| Weight                                                                               | g          | 24,5            | 23,5            | 35               | 35               |
| Operating pressure                                                                   | bar        |                 |                 | 2 → 8            | 2 → 8            |
| Sensor consumption for relay supply at 6 bar                                         | NI/        |                 |                 | 5                | 5                |
| The distance between relay and sensor must be less than 15 m for a tube Ø 2.7 x 4 mm |            |                 |                 | •                | •                |
| Connection - sub-base see pages 54/55                                                |            |                 |                 | •                | •                |
| Mechanical life                                                                      | operations |                 |                 | ≥10 <sup>7</sup> | ≥10 <sup>7</sup> |

### Connection



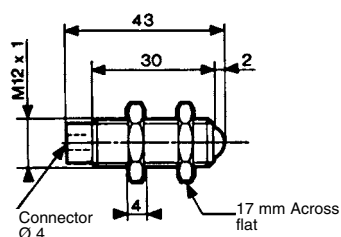
### Principle of operation

Supplied at industrial pressure, the relay produces a permanent bleed at its input port. A sensor shutting off this bleed causes the relay to switch.

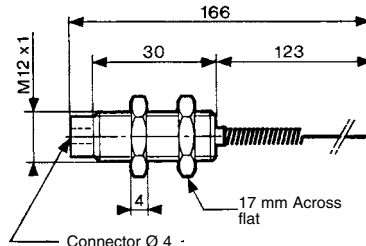


### Dimensions

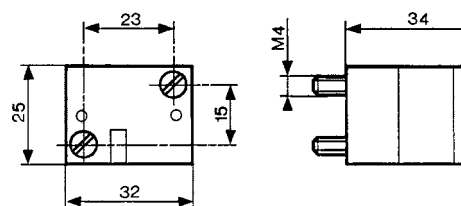
#### 81 512 201



#### 81 512 401



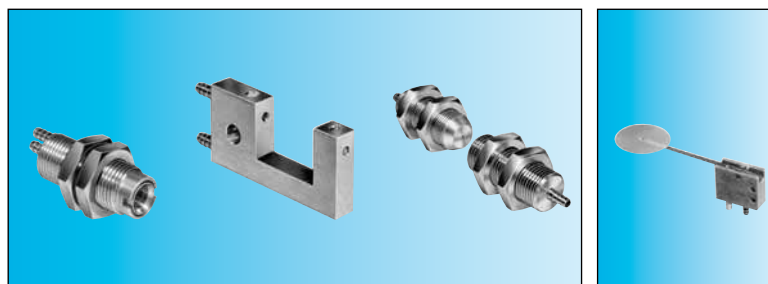
#### 81 502 435 - 81 505 435



Material: brass

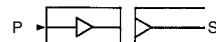
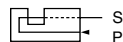
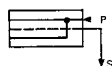
## Position detectors

- 100 % pneumatic
- All metal
- Gap, proximity, paddle



### Part numbers

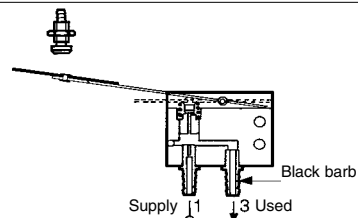
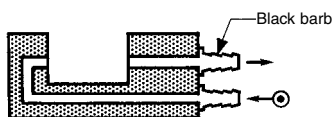
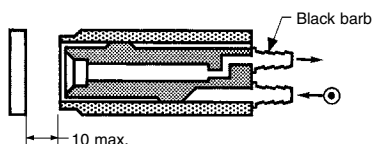
|          | 81 371 401   | 81 372 201 | 81 372 401 | 81 372 901   |
|----------|--------------|------------|------------|--------------|
| Detector | de proximité | gap        | gap        | with palette |
| Symbol   |              |            |            |              |



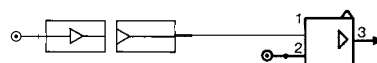
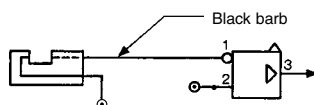
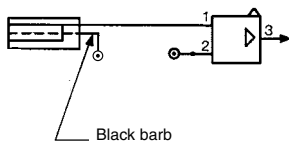
### Characteristics

|                                                   |                  |                     |            |            |           |
|---------------------------------------------------|------------------|---------------------|------------|------------|-----------|
| Detection distance                                | mm               | 6 → 10              | 18         | 100        | —         |
| 18 mm gap sensor                                  |                  | —                   | —          | —          | —         |
| Supply pressure                                   | bar              | 0.5 → 2.5           | 0.5 → 2.5  | 0.5 → 2.5  | —         |
| Minimum output pressure                           | mbar             | 1                   | 5          | 5          | —         |
| Unlimited life (static component)                 |                  | ●                   | ●          | ●          | —         |
| Operating temperature                             | °C               | - 20 → +70          | - 20 → +70 | - 20 → +70 | —         |
| Consumption at supply                             | 0.5 b            | NI/h                | 800        | 70         | 100       |
| pressure of:                                      | 2.5 b            | NI/h                | 2500       | 2200       | 700       |
| Barb connection for semi-rigid tubing (NFE 49100) | mm               | Ø 2.7 x 4           | Ø 2.7 x 4  | Ø 2.7 x 4  | Ø 2.7 x 4 |
| Operating pressure                                | nozzle           | —                   | —          | —          | 2 → 8     |
|                                                   | sensor           | d. detection 200 mm | —          | —          | 2 → 8     |
|                                                   |                  | d. detection 100 mm | —          | —          | 1 → 4     |
| Flow                                              | nozzle at 2 bars | NI/h                | —          | —          | 320       |
|                                                   | sensor at 2 bars | NI/h                | —          | —          | 320       |
|                                                   | at 2 bars        | N                   | —          | —          | 0.03      |
|                                                   | at 6 bars        | N                   | —          | —          | 0.09      |
| Sensor consumption for relay supply at 6 bars     | NI/min           | —                   | —          | —          | 5         |
| Weight                                            | g                | 36                  | 9          | 63         | 14        |

### Principle of operation

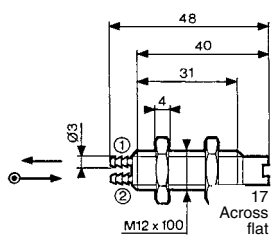


### Connection

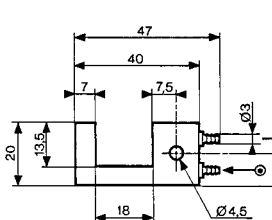


### Encombrements

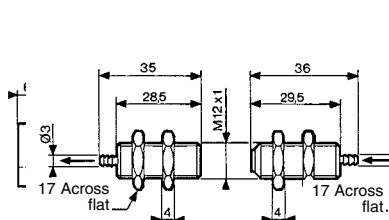
#### 81 371 401



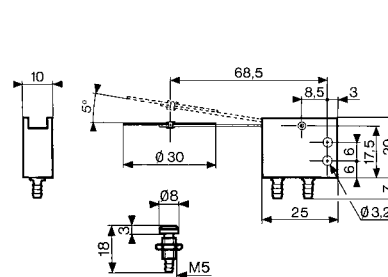
#### 81 371 201



#### 81 372 401



#### 81 372 901

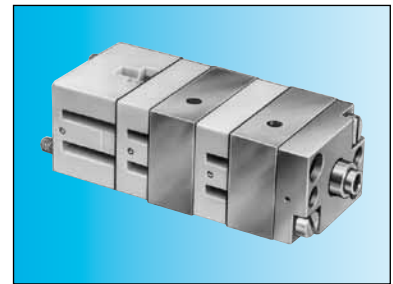
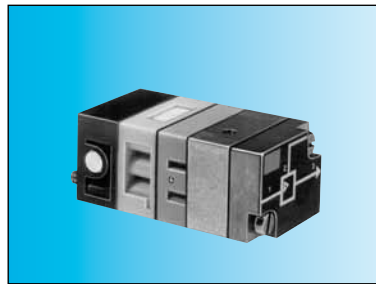


# Amplifiers for mounting on installation plan

## ■ Gap sensor



Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



## Part numbers

Simple amplifiers (for 81 372 201/401)

Sensitive amplifiers (for 81 371 401)

Version

Symbol

81 502 230

81 505 230

81 502 320

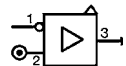
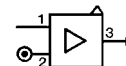
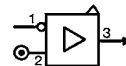
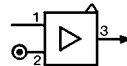
81 505 320

positive

negative

positive

negative



## Characteristics

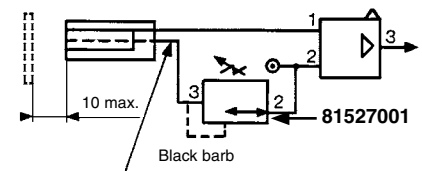
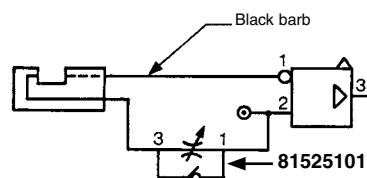
|                                         |            |                     |                     |                     |                     |
|-----------------------------------------|------------|---------------------|---------------------|---------------------|---------------------|
| Pressure to make                        | mb         | 10 → 20             | 10 → 20             | 1 → 4               | 1 → 4               |
| Operating pressure (non-lubricated air) | bar        | 2 → 8               | 2 → 8               | 2 → 6               | 2 → 6               |
| Orifice diameter                        | mm         | 2.5                 | 2.5                 | 2.5                 | 2.5                 |
| Average consumption at 4 bars           | NI/min     | 5                   | 5                   | 5                   | 5                   |
| Permissible overload for 1 hour         | mb         | 800                 | 800                 | 800                 | 800                 |
| Operating temperature                   | °C         | -5 → +50            | -5 → +50            | -5 → +50            | -5 → +50            |
| Mechanical life                         | operations | 3 x 10 <sup>6</sup> | 3 x 10 <sup>6</sup> | 3 x 10 <sup>6</sup> | 3 x 10 <sup>6</sup> |
| Weight                                  | g          | 150                 | 150                 | 185                 | 185                 |

## Connections

Used for gaps up to 25 mm.

The supply to the sensor should be made via a pressure regulator or one-way flow restrictor (see page 52)

Connection - sub-base

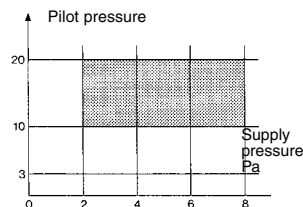


## Principle of operation

### Simple amplifiers

An output at normal industrial pressure is delivered on a low pressure input.

NB: Hysteresis is 20% of the pilot pressure.

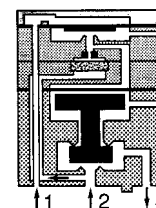
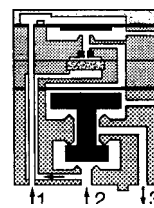


81 502 230

81 505 230

Positive output

Negative output

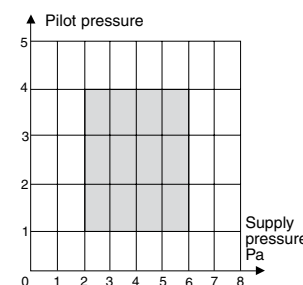


1- pilot  
2- supply  
3- output

### Sensitive amplifiers

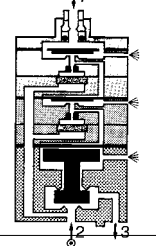
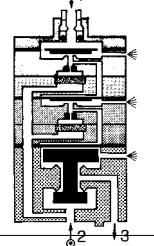
An output at normal industrial pressure is delivered on a very low pressure input.

Note: The specifications are given for a supply pressure of 6 bars, and for detection at the mid-point of the gap.



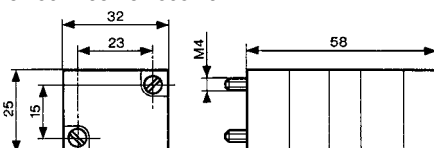
81 502 320

81 505 320

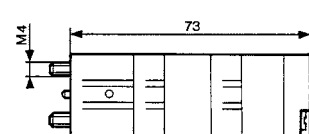
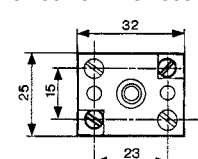


## Dimensions

81 502 238 - 81 505 231



81 502 322 - 81 505 321



Push-in connection for semi-rigid tubing Ø 4 mm (NFE 49100)

## Other information

With gap sensors, use an amplifier with negative output if you require a signal on interruption of the jet.

ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website [www.crouzet.com](http://www.crouzet.com)



## Amplifier with intégral régulator, positive output

- Setting Flow
- Fixing rail 35mm wide

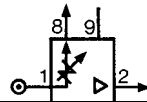


### Part numbers

Amplifiers with integral regulator  
Version

**81 510 001**  
Positive output

### Symbol



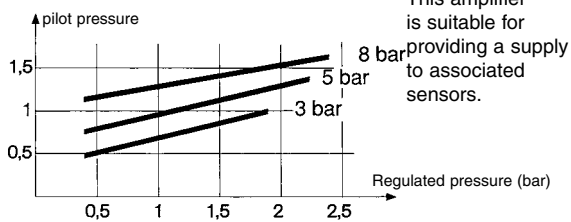
### Characteristics

|                                                                              |            |                     |                     |                     |
|------------------------------------------------------------------------------|------------|---------------------|---------------------|---------------------|
| Pressure to make                                                             | mb         | 0.5 → 1.5           | —                   | —                   |
| Reduced pressure supplied at port 8                                          | bar        | 0.5 → 2.5           | —                   | —                   |
| Flow through port 8                                                          | Nm³/h      | 0.1 → 2.5           | —                   | —                   |
| Consumption of amplifier only                                                | NI/h       | 100 → 200           | —                   | —                   |
| Permissible overload for 1 hour                                              | mb         | 300                 | —                   | —                   |
| Operating temperature                                                        | °C         | -5 → +50            | -5 → +50            | -5 → +50            |
| Mechanical life                                                              | operations | 3 x 10 <sup>6</sup> | 3 x 10 <sup>6</sup> | 3 x 10 <sup>6</sup> |
| Weight                                                                       | g          | 380                 | —                   | —                   |
| Detectors (see page 28)                                                      |            | Proximity<br>Ø 12   | Gap<br>Ø 18         | Proximity<br>Ø 12   |
| Nominal range                                                                | mm         | 81 371 401          | 81 372 201          | 81 372 401          |
| Min. total consumption for detection<br>(0.5 b regulated pressure)           |            | 8                   | 18                  | 100                 |
| Max. total consumption for short response<br>time (2.5 b regulated pressure) | NI/h       | 880                 | 140                 | —                   |
| Min. detectable                                                              | NI/h       | 2750                | 400                 | 920                 |
| dimensions nominal sensing distance                                          | mm         | Ø 3                 | Ø 2 - Ø 1.5         | Ø 7 - Ø 6.5         |
| Max. frequency of use                                                        | 2          | 2                   | —                   | —                   |
| Force exerted by the jet on the parts<br>to be detected                      | Hz         | 5                   | 5                   | 5                   |
|                                                                              | N          | 0.02 → 0.7          | 0.01 → 0.03         | 0.1                 |

### Connection

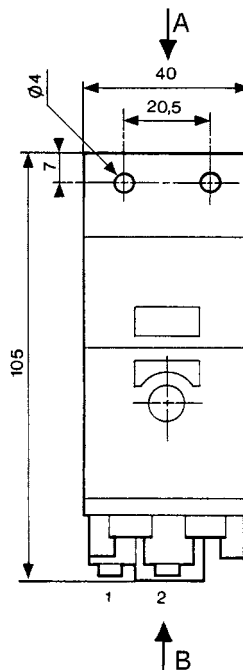
To use with detectors page 32

### Principle of operation

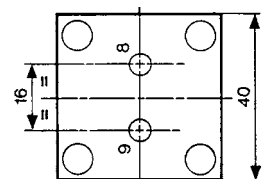


### Dimensions

Push-in connection for semi-rigid tubing Ø 4 mm (NFE 49100)



Viewed from B



Viewed from A

