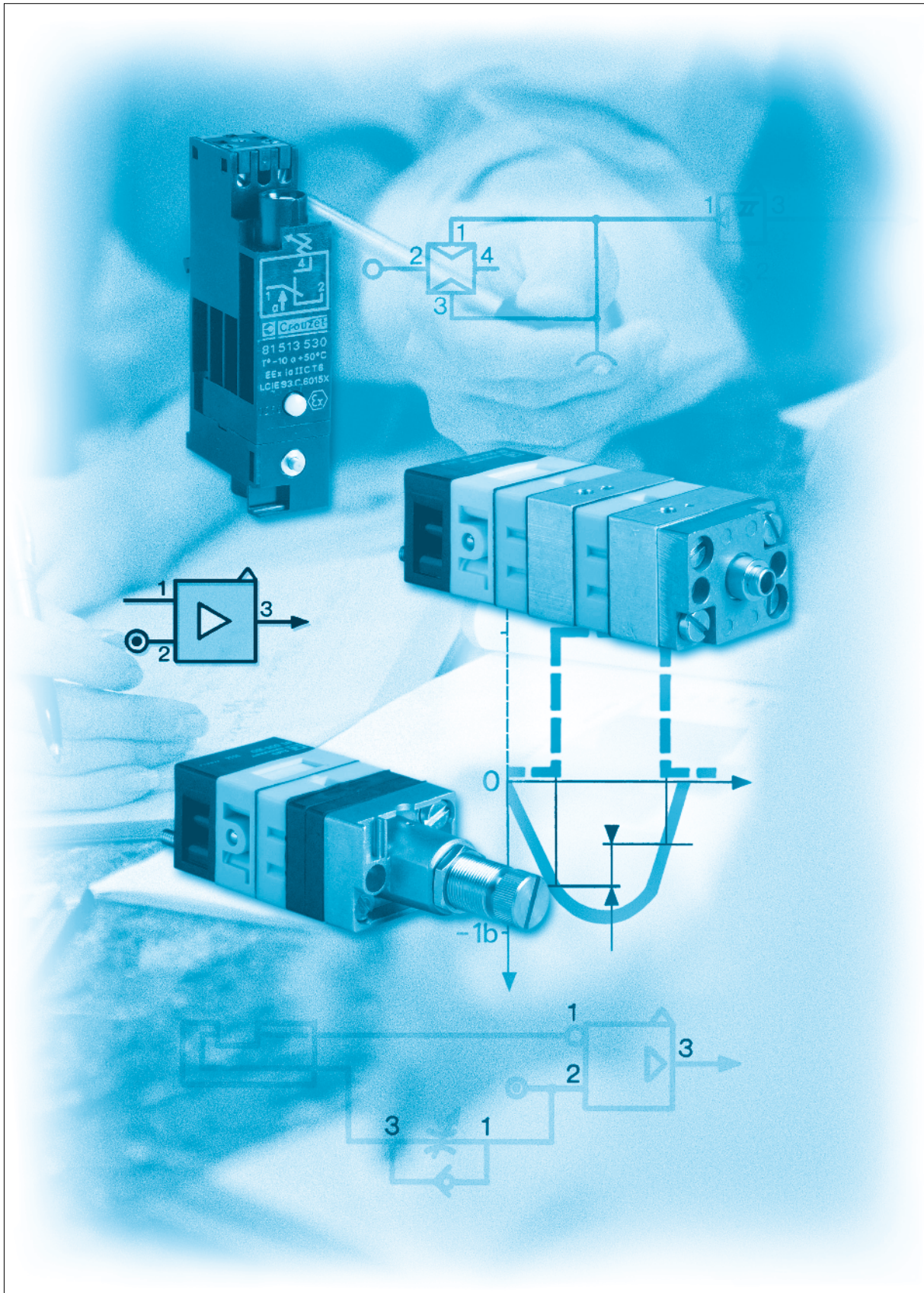


## Pressure switches - Vacuum



# Pressure switches - vacuum (electrical output)

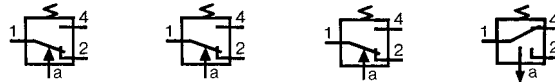
- Conform to the Low Voltage Directive
- Can be used without enclosure according to IEC 664-1 pollution group III



## Part numbers

Pressure and vacuum switches	81 513 552	81 513 502	81 513 501	81 513 522
Mounting	DIN rail	DIN rail	DIN rail	DIN rail
Actuators	Pressure with	Pressure without	Low pressure without	Vacuum without
Manual override				

## Symbol



## Characteristics

Pneumatic connection	Push-in connection for semi-rigid tubing (NFE 49100) Tapped BSP via connector	mm	Ø 4 ext.	Ø 4 ext.	Ø 4 ext.	Ø 4 ext.
Protection	IEC 529		IP 20	IP 20	IP 20	IP 20
Permissible fluid: air, inert gases and liquids			●	●	●	●
Adjustment of switching pressure (* adjusted to 0.3)	bar		2 → 8	2 → 8	0.3 → 1.2 *	-0.3 → -0.8
Hysteresis	at 1 bar at 2 bars at 4 bars at 6 bars max. 200 mb max. 250 mb	bar bar bar bar	0.5 0.6 0.8 1	0.5 0.6 0.8 1	— — — —	— — — —
Pressure to break			—	—	—	—
Mechanical life (operations)			10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>
Contact rating (V resistive)			5A - 220-230 V	5A - 220-230 V	5A - 220-230 V	5A - 220-230 V
Wire cross-section	mm <sup>2</sup>		0.75	0.75	0.75	0.75
Operating temperature	°C		-10 → +70	-10 → +70	-10 → +70	-10 → +70
Weight	g		48	46	46	46
Standard electrical contact			V4 83 170 4   W2	V4 83 170 4   W2	V4 83 170 4   W2	V4 83 170 4   W2
UL and cUL approval			MH15213 (R)	MH15213 (R)	MH15213 (R)	MH15213 (R)

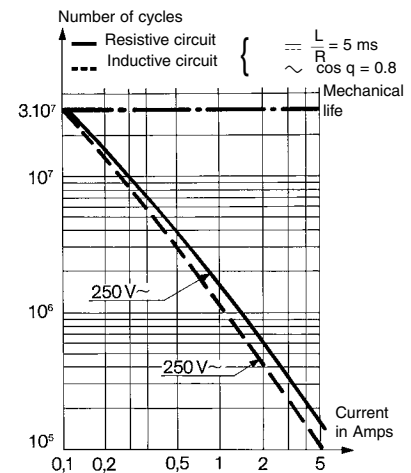
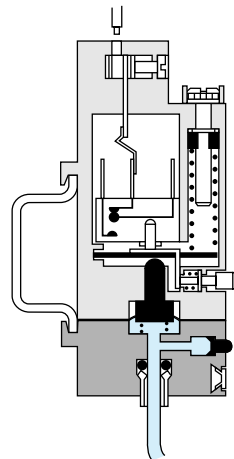
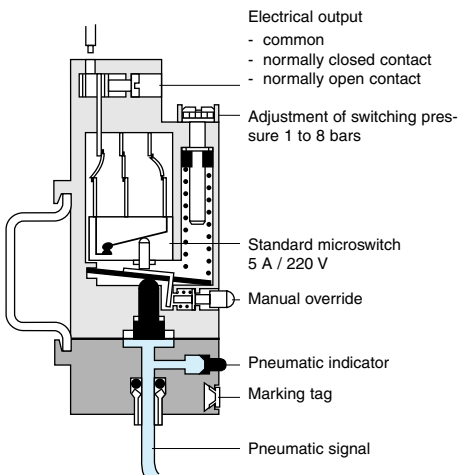
## Operation

Pressure operated

Vacuum operated

## Electrical life

(Crouzet microswitch "V4" ref 83 170 4-1-W2)

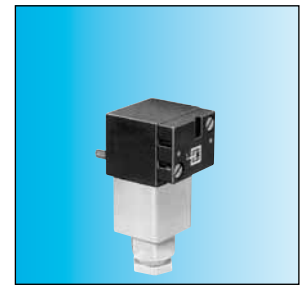
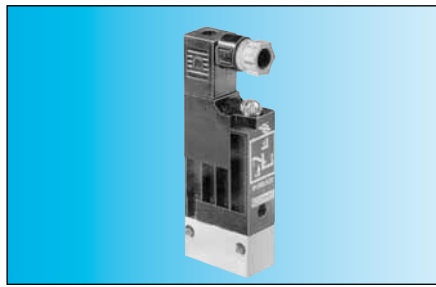
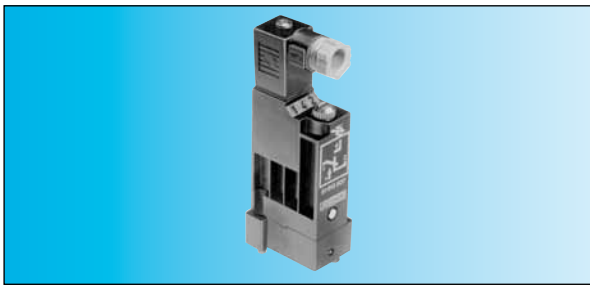


For continuous vacuum applications, please consult us.

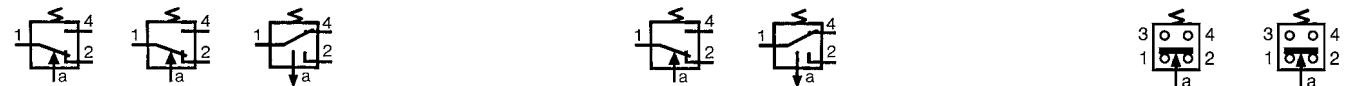
## Other information

On request :

- Microswitch V4 ref. 83 170 0 i W2 high current
- Microswitch V4 ref. 83 170 9 i W2 low current



<b>81 513 516</b>	<b>81 513 510</b>	<b>81 513 527</b>		<b>81 513 533</b>	<b>81 513 523</b>		<b>81 509 080</b>	<b>81 509 085</b>
Base mounted page 4/14	Base mounted page 4/14	Base mounted page 4/14		2 screws M4	2 screws M4		Base mounted page 4/14	Base mounted page 4/14
Pressure without	Pressure with	Vacuum without		Pressure without	Vacuum without		Pressure without	Pressure with

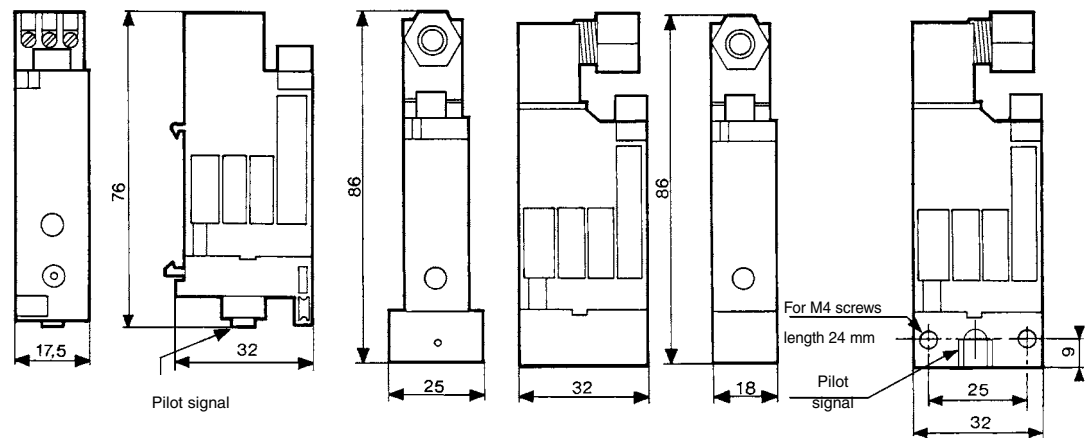
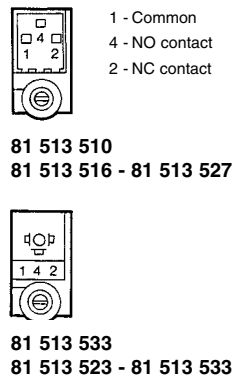


Ø 4 ext.	Ø 4 ext.	Ø 4 ext.		—	—		—	—
IP 54	IP 54	IP 54		1/8 BSP IP 54	1/8 BSP IP 54		Via sub-base IP 54	Via sub-base IP 54
2 → 8	2 → 8	-0.3 → -0.9		2 → 8	-0.3 → -0.8		1.4 ± 0.5	1.4 ± 0.5
0.5	0.5	—		0.5	—		—	—
0.6	0.6	—		0.6	—		—	—
0.8	0.8	—		0.8	—		—	—
1	1	—		1	—		—	—
—	—	—		—	—		—	—
—	—	—		—	—		—	—
10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>		10 <sup>6</sup>	10 <sup>6</sup>		0.6 ± 0.2	0.6 ± 0.2
5A - 220-230 V	5A - 220-230 V	5A - 220-230 V		5A - 220-230 V	5A - 220-230 V		10 <sup>6</sup>	10 <sup>6</sup>
0.75	0.75	0.75		0.75	0.75		5A - 220-230 V	5A - 220-230 V
-10 → +70	-10 → +70	-10 → +70		-10 → +70	-10 → +70		1.5	1.5
56	58	56		65	65		-10 → +70	-10 → +70
V4 83 170 4   W2	V4 83 170 4   W2	V4 83 170 4   W2		V4 83 170 4   W2	V4 83 170 4   W2		80	80
MH15213 (R)	MH15213 (R)	MH15213 (R)		MH15213 (R)	MH15213 (R)		83 133 004	83 133 004

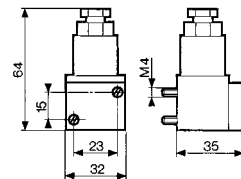
**Electrical connections**  
**81 513 501 - 81 513 502**  
**81 513 522 - 81 513 552**

**Dimensions**  
**81 513 552 - 81 513 502**  
**81 513 501 - 81 513 522**

**Pressure switch with connector**  
**81 513 516 - 81 513 510**  
**81 513 527**  
**81 516 082**  
**81 513 533**  
**81 513 523**



**81 509 080 - 81 509 085**



# Adjustable pressure switches (manostats) (pneumatic output)

■ 100 % pneumatic



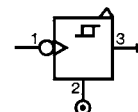
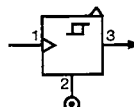
Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



## Part numbers (and adjustment ranges)

Adjustment range	50 → 500 mb 0.1 → 2.5 b 2 → 8 b	<b>81 505 140</b> <b>81 505 150</b> <b>81 505 160</b>	<b>81 502 140</b> <b>81 502 150</b> <b>81 502 160</b>
Version		Positive output	Negative output
Accuracy	50 → 500 mb 0.1 → 2.5 b 2 → 8 b	10 % 4 % 4 %	10 % 4 % 4 %

## Symbol

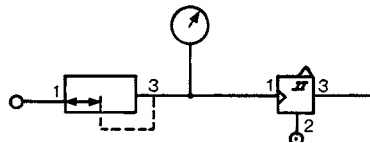


## Characteristics

Orifice diameter	mm	2.5	2.5
Flow at 4 bars	NI/min	170	170
Hysteresis	50 → 500 mb 0.1 → 2.5 b 2 → 8 b	60 mb 100 mb 320 mb	60 mb 100 mb 320 mb
Connection - sub-base pages 54/55		●	●
Operating temperature	°C	-5 → +50	-5 → +50
Mechanical life	operations	3 x 10 <sup>6</sup>	3 x 10 <sup>6</sup>
Weight	g	160	160

## Connections

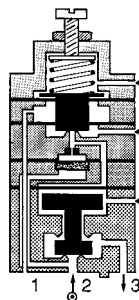
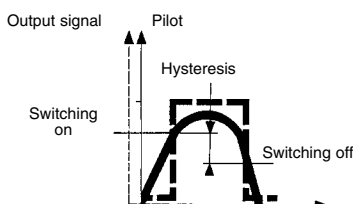
Example of pressure threshold adjustment (mini-regulator - manostat)



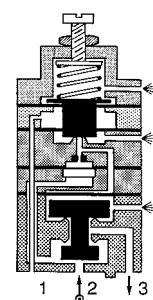
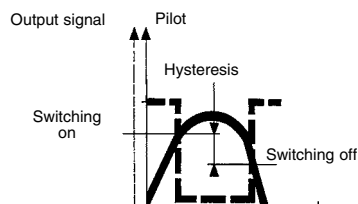
## Principle of operation

The manostats provide an on or off output signal when the input signal reaches a predetermined pressure threshold.

### Positive output

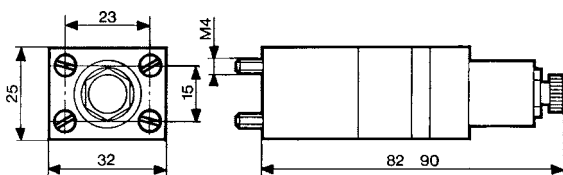


### Negative output



## Dimensions

81 502 140 - 81 502 150 - 81 502 160  
81 505 140 - 81 505 150 - 81 505 160

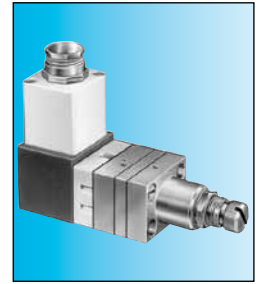


**Other information** Pressure switches with electrical output on request.

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)

# Adjustable vacuum switches (vacuostat)

- 100 % pneumatic
- For vacuum -0,1 → -0,9 Bar



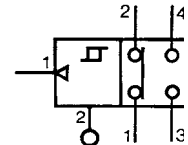
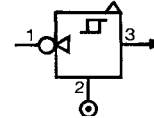
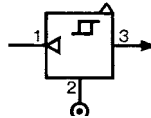
## Part numbers

**81 505 110**  
Positive output

**81 502 110**  
Negative output

**81 508 110**  
Electrical output

## Symbol

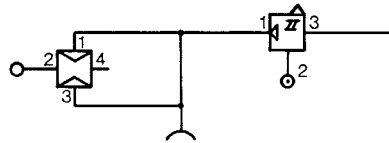


## Characteristics

Adjustment range	b	- 0.1 → -0.9	- 0.1 → -0.9	- 0.1 → -0.9
Flow at 6 bars	NI/min	170	170	170
Hysteresis	mb	80	80	80
Connection - sub-base pages 54/55		●	●	●
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	160	160	180

## Connections

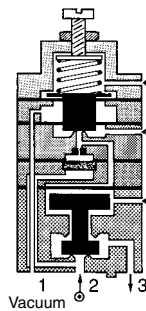
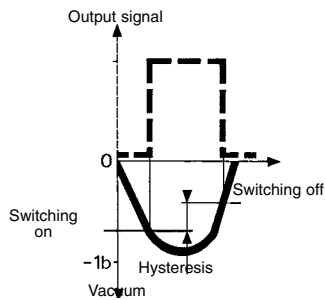
Example of use:  
Vacuum handling (vacuum generator, vacuum pad, vacuostats).



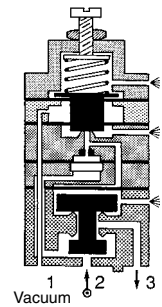
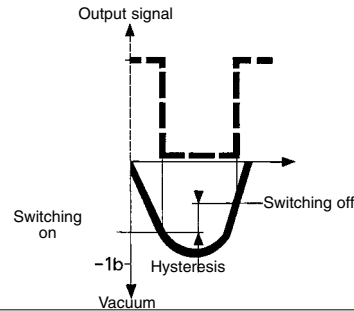
## Principle of operation

Vacuostats provide an on or off output signal when the input signal reaches a predetermined pressure threshold.

### Positive output

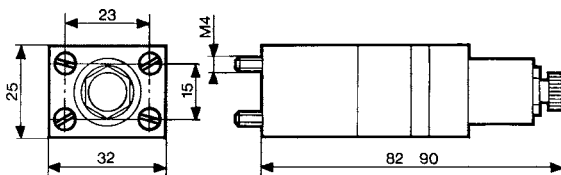


### Negative output

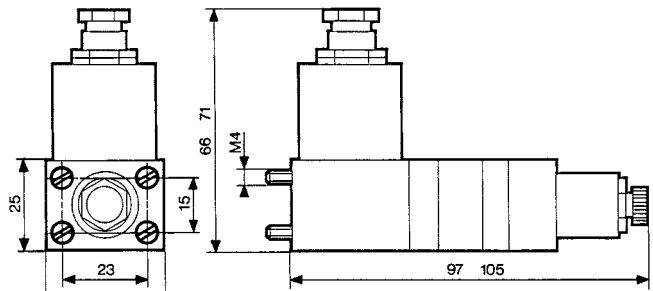


## Dimensions

81 502 110 - 81 505 110



81 508 110

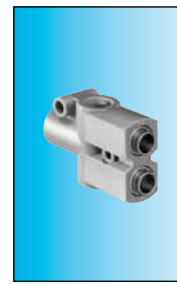
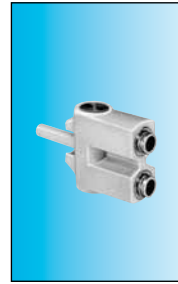


# Vacuum handling components

- Sur le principe du Venturi
- Facilement raccordable



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



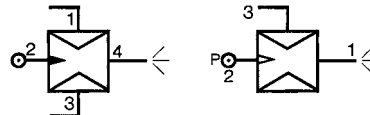
## Part numbers

Vacuum generators

**81 535 301**  
Sub-base mounting

**81 545 001**  
Plug-in

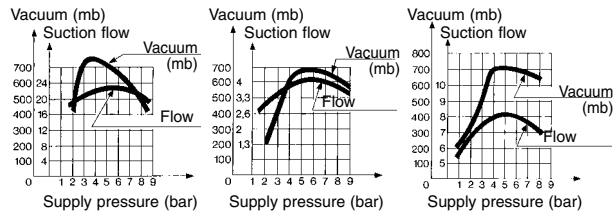
**81 545 005**  
Plug-in



## Characteristics

Push-in connectors for semi-rigid tubing (NFE 49100)	Male/Female/Female (MFF) Female/Female/Female (FFF)	—	Ø 4 mm	—
Operating pressure	bar	2 → 8	2 → 8	2 → 8
Vacuum pad material		—	—	—
Weight	g	80	13	25

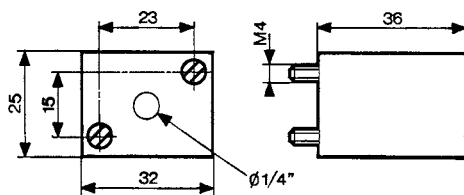
Detection of the pressure decrease can be achieved by the use of manostats (see pages 38/39)



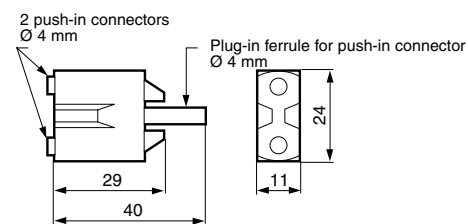
## Dimensions

### 81 535 301

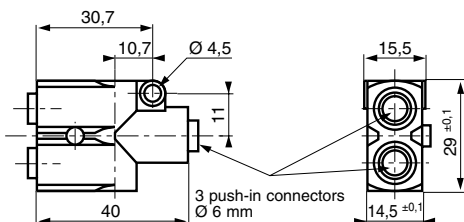
Sub-base mounting 81 531... and 81 532...



### 81 545 001



### 81 545 005



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)