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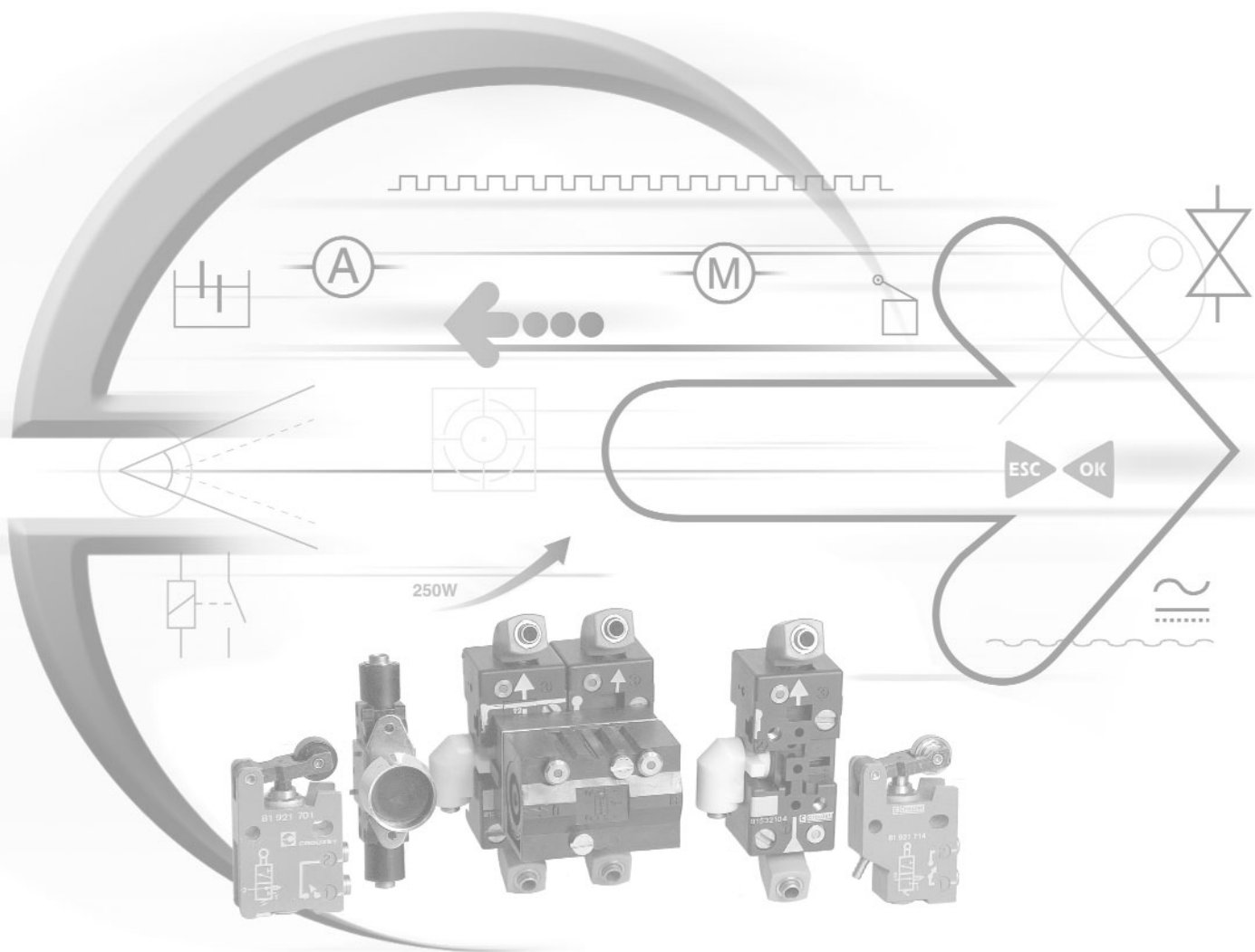
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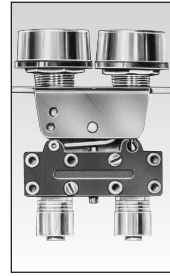
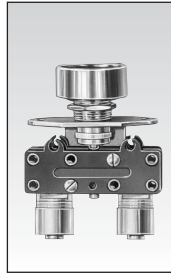
Man/machine interface components



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Manual Control Valves for 1/2" (12mm) hole size



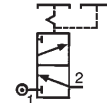
1

Part Number

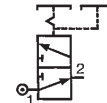
Features			Round push button	Round double push button
Version	NC	black	81 735 511	—
		red	81 735 512	—
		black/red	—	81 733 511
	NO	black	81 735 011	—
		red	—	—
		black/red	—	—

Symbol

NC



NO



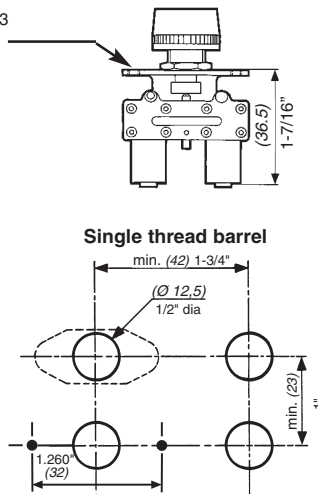
Characteristics

Operating Pressure	PSI (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Internal orifice	inches (mm)	0.106" (2.7)	0.106" (2.7)
Flow @ 90 PSI (6 bar)	cfm (Nm ³ /h)	7 (200)	7 (200)
Valve			
NC : black		●	●
NO : grey		●	●
Operating force	lbs. (N)	2 > 4 (8 > 18)	2 > 4 (8 > 18)
Effective travel	inches (mm)	0.04 (1)	0.04 (1)
Fluid: dry or lubricated air		●	●
Push-in connection for semi-rigid tubing O.D. (NFE 49100)	inches (mm)	5/32" (4)	5/32" (4)
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
Mechanical life		1.5 million	1.5 million
Weight	grams	35	35

Dimensions

81 735

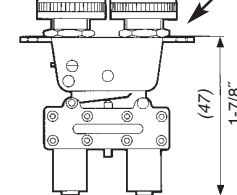
2 holes threaded M3 or 3/32" (2.3) thru.



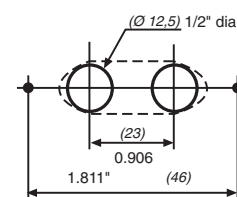
Single thread barrel

81 733

2 holes threaded M3 or 3/32" (2.3) thru.



Double thread barrel



Use (metric) dimensions for critical data

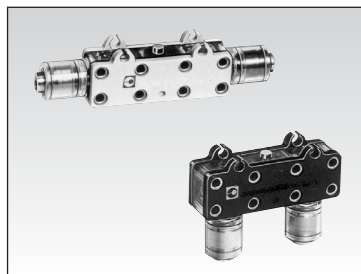
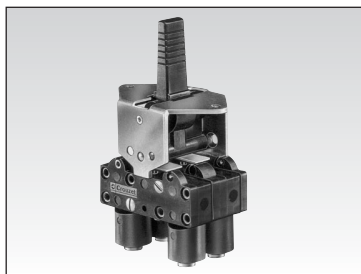
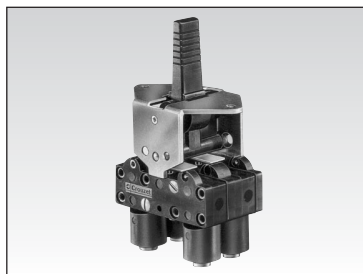
Other Information

on request

Part Numbers. : 81 702 011 / 511 - 81 715 012 - 81 716 011 / 012 - 81 731 011 / 511 - 81 733 011
81 734 011 / 012 / 511 / 512 - 81 735 012 - 81 752 012 / 512

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3 position manual
return lever

81 716 511

81 716 512

—
—
—
—

3 position spring
centered lever

81 715 511

81 715 512

—
—
—
—

horizontal output
replacement valve

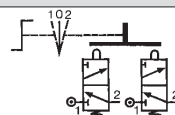
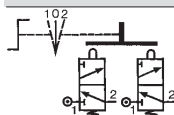
81 280 510

—
—
81 280 010
—
—

vertical output
replacement valve

81 281 510

—
—
81 281 010
—
—



30 > 120 (2 > 8)
0.106" (2.7)
7 (200)

2 > 4 (8 > 18)
0.04 (1)

5/32" (4)
+20 > +120 (-5 > +50)
1.5 million
65

30 > 120 (2 > 8)
0.106" (2.7)
7 (200)

2 > 4 (8 > 18)
0.04 (1)

5/32" (4)
+20 > +120 (-5 > +50)
1.5 million
65

30 > 120 (2 > 8)
0.106" (2.7)
7 (200)

3 > 1/8 (15)
0.04 (1)

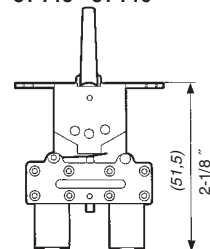
5/32" (4)
+20 > +120 (-5 > +50)
1.5 million
14

30 > 120 (2 > 8)
0.106" (2.7)
7 (200)

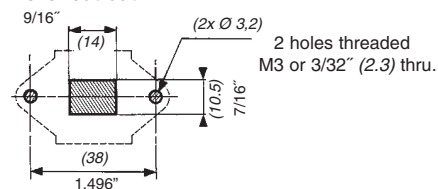
3 > 1/8 (15)
0.04 (1)

5/32" (4)
+20 > +120 (-5 > +50)
1.5 million
14

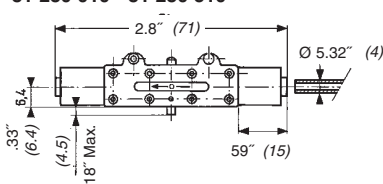
81 715 - 81 716



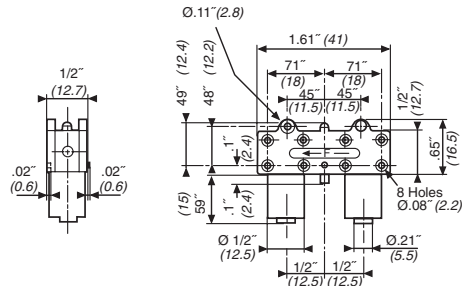
Lever cut-out



81 280 010 - 81 280 510



81 281 010 - 81 281 510



Use (metric) dimensions for critical data

To order, specify:

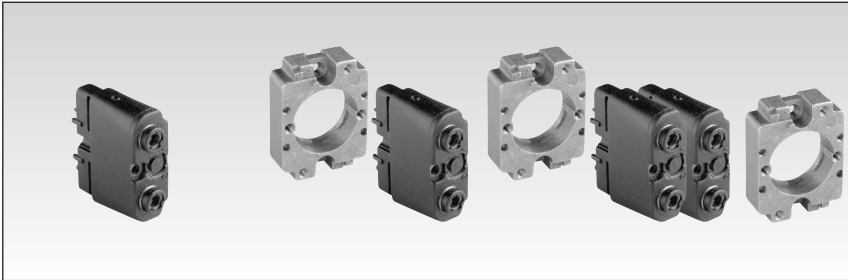
Standard product

1 Part number

**Standard product
not stocked**

Example: Round push button in black-81 735 511

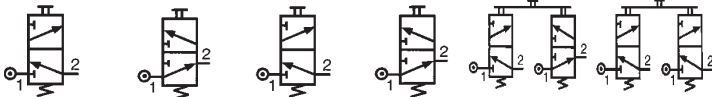
3/2 valves for manual actuators (Ø 22 mm)



Part numbers

3/2 valve supplied with screws for fixing the adaptor	Connection Ø 4	89 544 501	89 544 001	—	—	—	—	—
3/2 valve (module and adaptor)	1/8 BSP	89 544 701	89 544 201	—	—	—	—	—
Adaptor for 3/2 valve on actuators Ø 22	Connection Ø 4	—	—	89 545 105	89 545 005	89 545 305	89 545 205	—
Version		NC	NO	NC	NO	NC + NO	NC + NC	24 679 701

Symbol

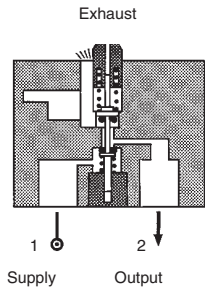


Characteristics

Operating pressure	bar	0 → 10	0 → 10	0 → 10	0 → 10	0 → 10	0 → 10	—
Orifice diameter	mm	2	2	2	2	2	2	—
Flow at 4 bars	NI/min	90	90	90	90	90	90	—
Control force	N	12.6	12.6	12.6	12.6	12.6	12.6	—
Operating temperature in dry air	°C	-10 +60	-10 +60	-10 +60	-10 +60	-10 +60	-10 +60	—
Life	operations	1.5 x 10 ⁶	1.5 x 10 ⁶	1.5 x 10 ⁶	1.5 x 10 ⁶	1.5 x 10 ⁶	1.5 x 10 ⁶	—
Non-connectable exhaust		●	●	●	●	●	●	—
Weight	g	50	50	60	60	110	110	40

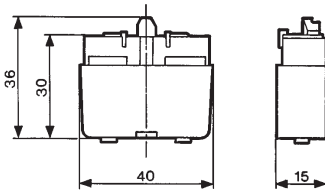
Principle of operation

NC version

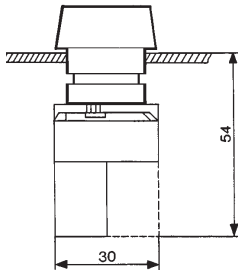


Dimensions

89 544 001 - 89 544 201
89 544 501 - 89 544 701

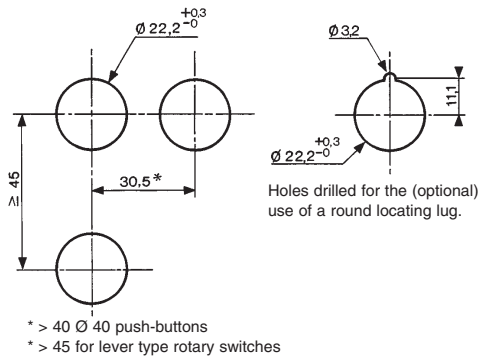


Ø 22 series

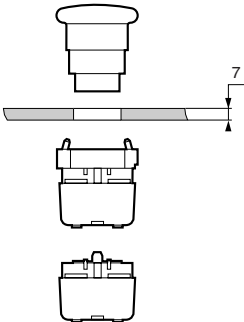


Holes drilled in panel for actuators Ø 22

EN 50007



Installation



To order, specify:

Standard products

Standard products,
non stocked



Part number

Example : Valve module 89 544 501

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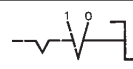
Actuators (Ø 22 mm) for manually operated valves



Part numbers

Push buttons	Red	24 679 129	24 679 173	24 679 171	—
	Green	24 679 128	—	—	—
	Black	24 679 127	24 679 172	—	—
2-position rotary switches	—	—	—	—	24 679 174
3-position rotary switches	—	—	—	—	—
Function	—	Flush push contact	Emergency stop plastic Ø 40	Emergency stop Ø 40 mm push-turn	Black symmetrical actuator

Symbol



Position

Weight	g	30	45	45	45
--------	---	----	----	----	----

Dimensions

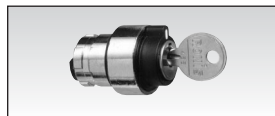
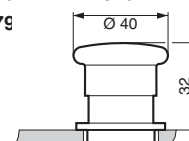
24 679 127 - 24 679 128

24 679 129



24 679 171 - 24 679 172

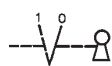
24 679



Part numbers

2-position rotary switches	24 679 180	—				
3-position rotary switches	—	24 679 176	24 679 178	24 679 182	24 679 181	
Function	RONIS key 455 removable in position 0	Black symmetrical actuator	Black symmetrical actuator with return	RONIS key 455 remov. in pos. 0 3 positions with spring to centre	RONIS key 455 removable in position 0 3 fixed positions	

Symbol



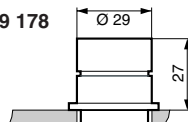
Position

Weight	70	45	45	70	70
--------	----	----	----	----	----

Dimensions

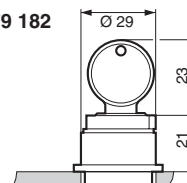
24 679 174 - 24 679 176

24 679 178



24 679 180 - 24 679 181

24 679 182



To order, specify:

Standard products

1 Part number

Example : Actuators Ø 22 mm 24 679 129

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Pneumatic 2-hand control

Conforms to the
Machinery Directive



Definition (conforming to EN 574)

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 954-1) : the system should use well tried components and principles.

Category 3 (EN 954-1) : the system must be designed so that a single fault will not cause the loss of the safety function.

Category 4 (EN 954-1) : 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

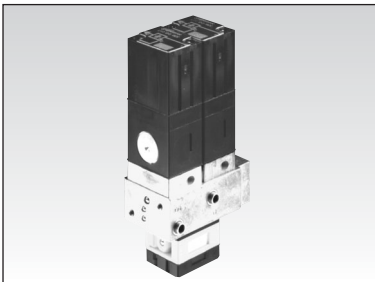
The release of a single control device interrupts the output signal, but a reset is only possible once both control devices have been released.

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Pneumatic relay for two-hand control

- Conforms to the Machinery Directive
- CE Test Certificate type



Part numbers

Pneumatic relay for two-hand control

EN 574 classification

CE Test Certificate type

81 580 101

III A

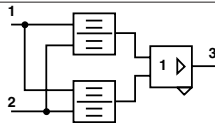
0526 520 1690 0197

81 580 202

III B

0526 520 1692 0197

Symbol

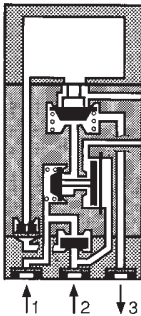


Characteristics

Operating pressure	psi	(bar)	30 > 120	(2 > 8)	30 > 120	(2 > 8)
Orifice diameter	inches	(mm)	0.1"	(2.5)	0.1"	(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 ⁷		10 ⁷	
Weight	g		90		320	

Principle of operation

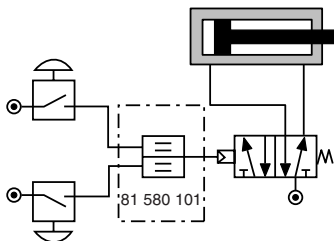
81 580 101



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.

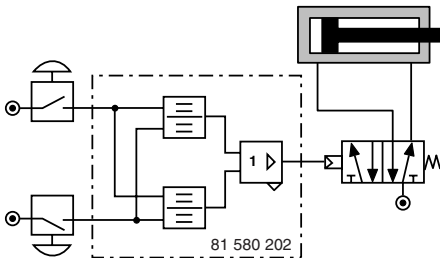
Connections (Typical application with double-acting cylinder)

81 580 101



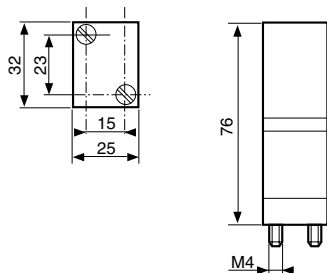
Components follow current standards

81 580 202



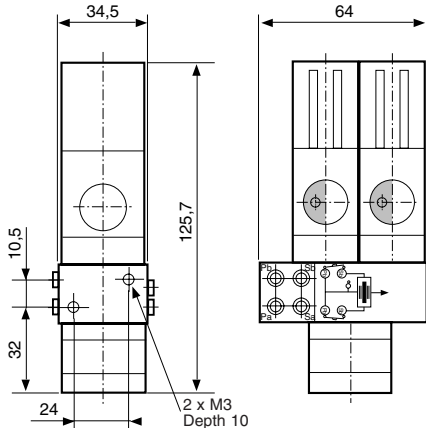
Dimensions

81 580 101



Mounted on sub-base 81 532 001
(See page 5/44 and 5/45 of Pneumatic catalogue)

81 580 202



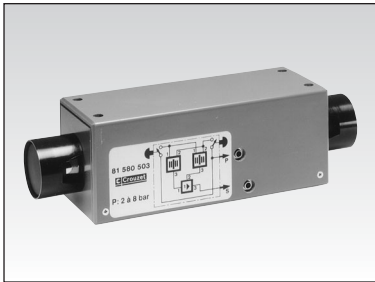
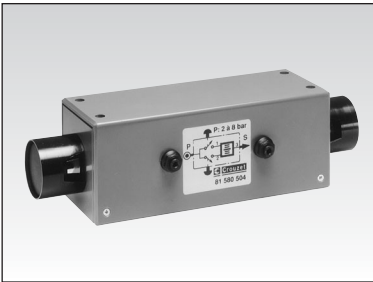
Other information	To order, specify:
	Standard products 1 Part number Example : Pneumatic 2-hand control - 81 580 101

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

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



Part numbers

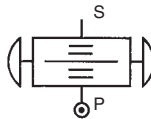
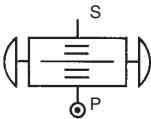
Two-hand pneumatic safety start module
Pneumatic relay (to EN 574)

81 580 504
Type III A

81 580 503
Type III B

1

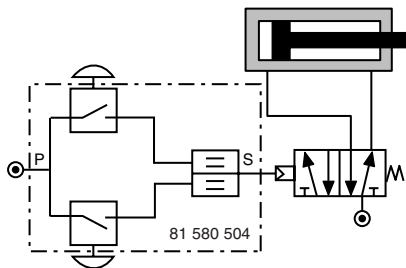
Symbol



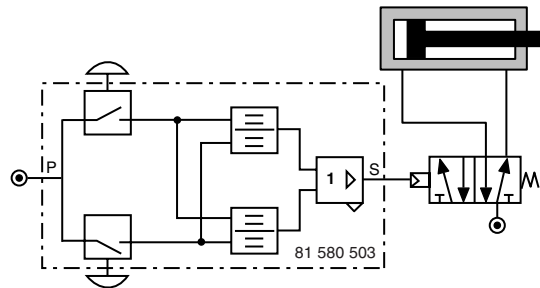
Characteristics

Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Orifice diameter	inches (mm)	0.1" (2.5)	0.1" (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 ⁶	1.5 x 10 ⁶
Weight	g	1000	1410

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



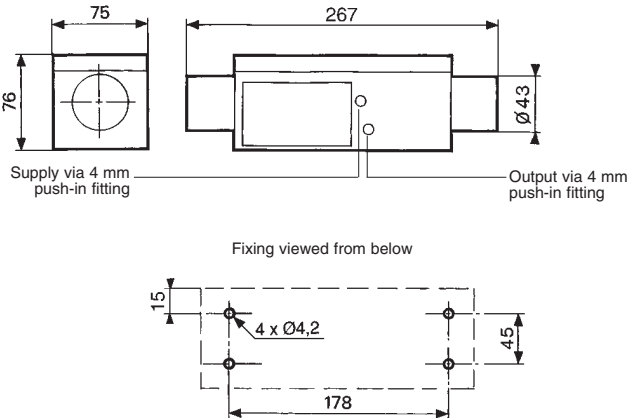
81 580 503



Components follow current standards

Dimensions

81 580 503 - 81 580 504



Other information	To order, specify:
	Standard products 1 Part number Example : Two-hand pneumatic safety start module - 81 580 503

Products and specifications subject to change without notice.

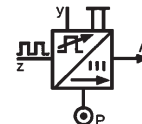
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Pneumatic impulse counters



Part numbers

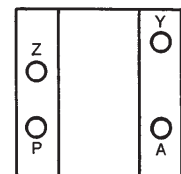
Totalizer	99 766 002	—
Preselection counter	—	89 538 201
Version	4 digits with manual zero reset	5 digits with manual or pneumatic zero reset

Symbol

Characteristics

Characteristics		Type 100		Type 100	
Supply pressure	PSI (<i>bar</i>)	30 > 120 (<i>2 > 8</i>)		30 > 120 (<i>2 > 8</i>)	
Dis-engagement pressure	PSI (<i>bar</i>)	< 2 (<i>< 0.15</i>)		< 2 (<i>< 0.15</i>)	
Engagement pressure	PSI (<i>bar</i>)	> 12 (<i>> 0.8</i>)		> 12 (<i>> 0.8</i>)	
Reset:	Minimum pressure	PSI (<i>bar</i>)	30 (<i>2</i>)	30 (<i>2</i>)	
	Reset time	ms	150	150	
Preselector output valve				●	
Circuit pressure	PSI (<i>bar</i>)			30 > 120 (<i>2 > 8</i>)	
Signal emitted when the preselector is reached				●	
Operating temperature	°F (°C)	+32 > +140 (<i>0 > +60</i>)		+32 > +140 (<i>0 > +60</i>)	
Weight	grams	48		136	

Connection



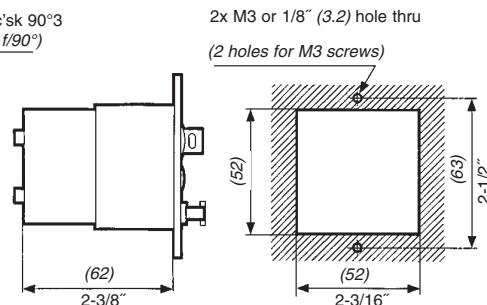
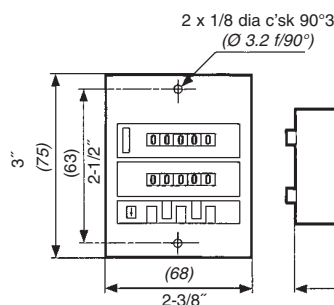
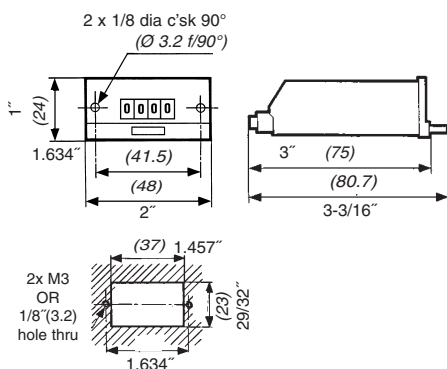
A - Output signal
P - Supply
Y - Reset to zero
signal
Z - Input signal

Note: the count pulse must be removed before the reset pulse is applied. The preselected value can be changed during operation without the counter resetting to zero.

Dimensions

99 763 001 - 99 763 002

89 538 201

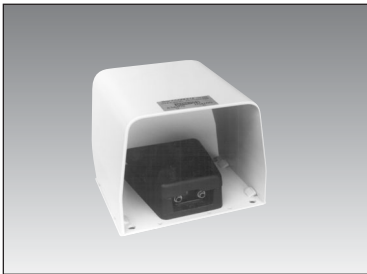


Other information	To order, specify:
	Standard products 1 Part number
	Standard products, non stocked Example : Pneumatic impulse counter - 99 766 002

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Indicators and pedal valves

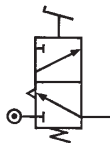


Parts numbers

Type

Pneumatic indicators for 7/8" (22mm) cut-out	Red	84 150 201
	Green	84 150 202
	Yellow	84 150 203
	Blue	84 150 204
Pedal valve - Version NC		—

Symbol

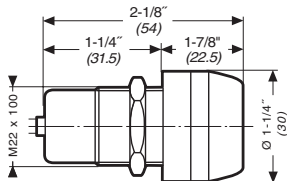


Characteristics

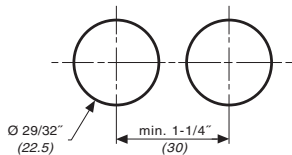
Operating Pressure	PSI (bar)	30 > 120 (2 > 8)
Instant connection for tube O.D.	inches (mm)	5/32" (4)
Weight	grams	34

Dimensions

84 150 201 - 84 150 202
84 150 203 - 84 150 204



Cut out for indicators



Use (metric) dimensions for critical data

To order, specify:

Standard products

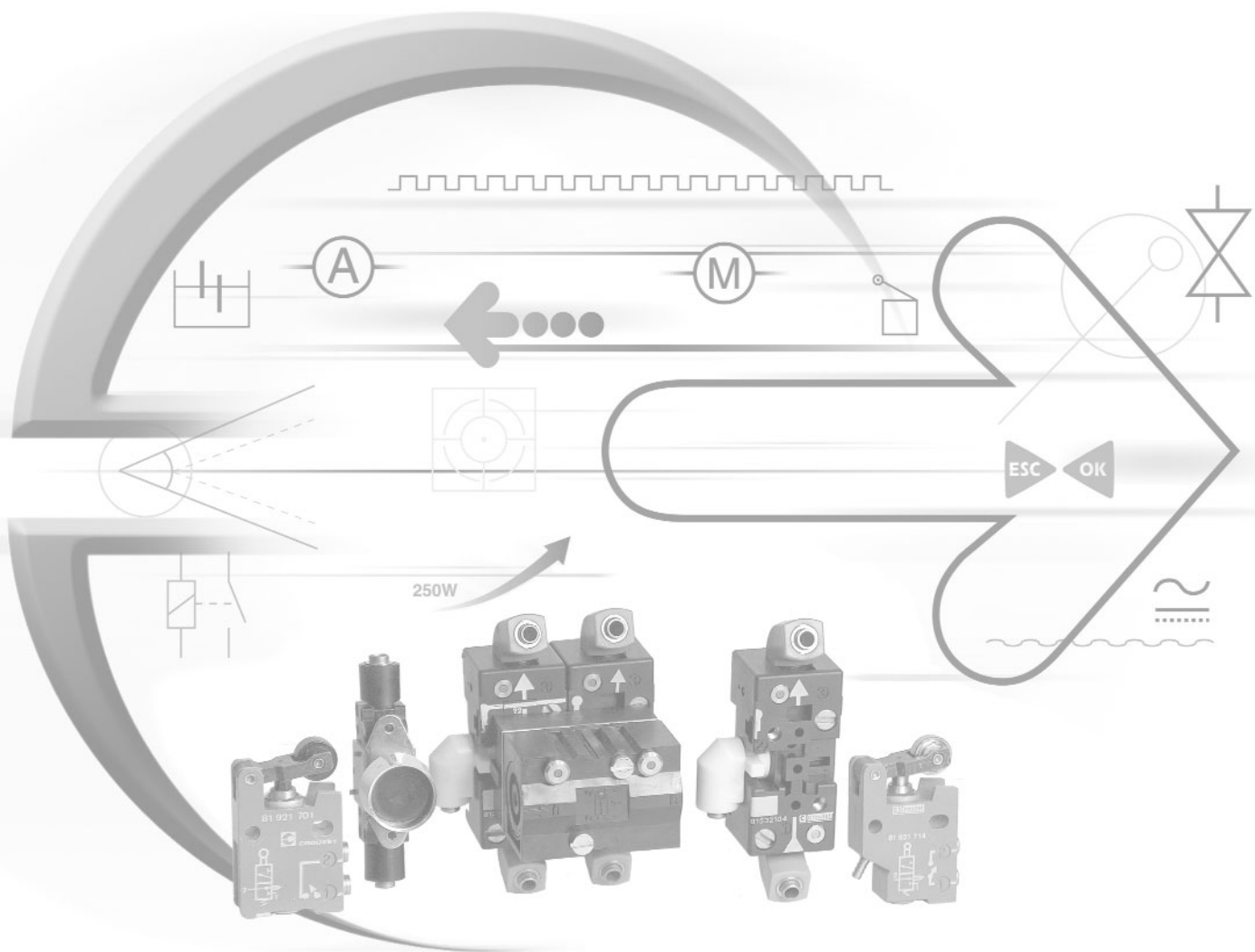
1

Part number

Example: pneumatic indicator Ø 22 - 84 150 201

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Position Detectors



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Pressure decay sensor



Part numbers

Pressure decay sensor

81 504 025

1

Symbol

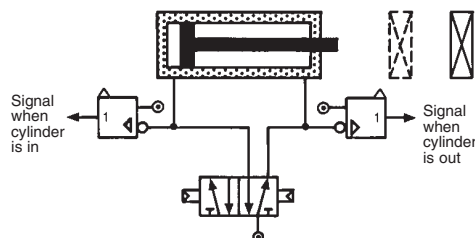


Characteristics

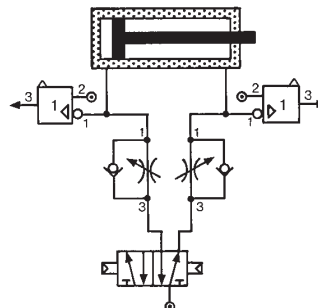
Operating pressure	psi (bar)	30 > 120 (2 > 8)
Flow at 90 psi (6 bars)	cfm(Nl/min)	7 (200)
Tripping point at 90 psi (6 bar) supply	psi (bar)	4.5 (0.3)
Connection		Sub-base page 5/44 - 5/45 or PAC mounting
Operating temperature	°F (°C)	+25 > +120 (-5 > +50)
Mechanical life	operations	10 million
Weight	(grams)	25
Relay Color		Light grey

Connections

Pressure decay sensor



Position of one-way flow restrictors

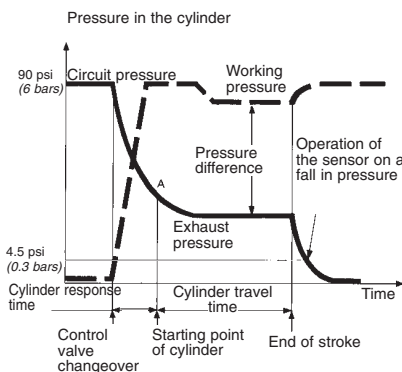


Principle of operation

Mounted in-line between the cylinder and the control valve, the sensor will give an output signal 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.

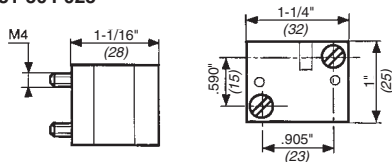
Evolution of pressure within a double-acting cylinder.



Note: Caution should be taken on application because mechanical binding or seal failure of cylinder or valve will cause sensor to give or not give output signal.

Dimensions

81 504 025



Note: Use (metric) for critical data.

To order, specify :

Standard products

1

Part number

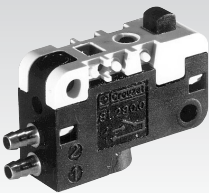
Example : Pressure decay sensor - 81 504 025

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Low force position detectors

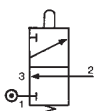
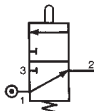
- Conforms to standard DIN 43365 Form A
- Low activation force < 1.7 oz. (50 g @ 6 bars) at 90 psi
- No continuous consumption of compressed air



Part numbers

Function	NO	81 290 501	—
	NC	—	81 290 001

Symbol

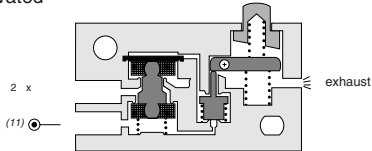


Characteristics

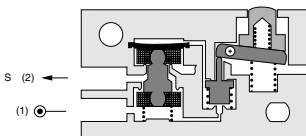
Orifice diameter	inches(mm)	5/64" (2)	5/64" (2)
Operating pressure	psi(bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Flow at 60 psi(4 bars)	cfm(Nl/min)	4.5 (130)	2.5 (>70)
Activation force at 90 (6 bars)	ounces(g)	<1.7 (< 50)	<1.7 (< 50)
Permissible fluid: air, inert gases			
Max/min. of fluid temperatures	°F(°C)	+20> +120 (-10 > +50)	+20> +120 (-10 > +50)
operating	°F(°C)	+20> +140 (-10 > +60)	+20> +140 (-10 > +60)
storage	°F(°C)	+20> +160 (-40 > +70)	+20> +160 (-40 > +70)
Mechanical life at 90psi (6 bars)	cycles	10 million	10 million
Response on activation	ms	≤ 15	≤ 15
time on release	ms	≤ 15	≤ 15
Barb connection for semi-rigid tubing	inches(mm)	0.106" I.D.x 5/32" O.D. (2.7x4)	0.106" I.D.x 5/32" O.D. (2.7x4)
Weight	grams	8.5	8.5

Principle of NC operation

Deactivated



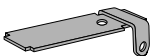
Activated



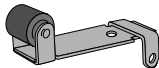
Operation accessories

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

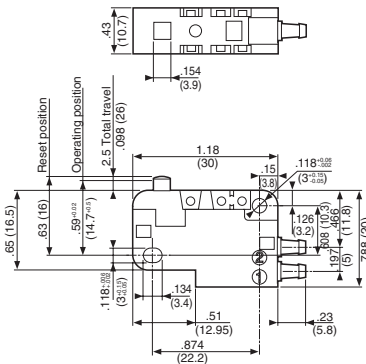
161 A
flat
79 215 741



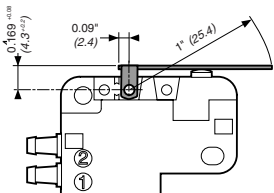
161 G
roller
70 507 529



Dimensions

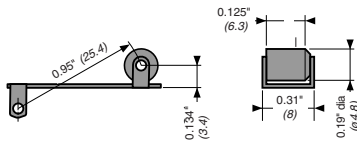


161 A



161 E

79 215 742



Use (metric) dimensions for critical data

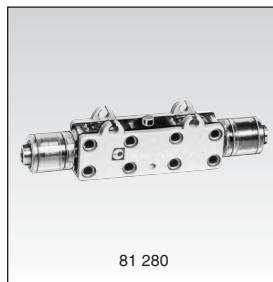
Other information	To order, specify :
On request : Wide range of actuators Connectable exhaust	Standard products 1 Part number 2 Accessory Example : Low force position detector 81 290 501 Flat lever 79 215 741

Products and specifications subject to change without notice.

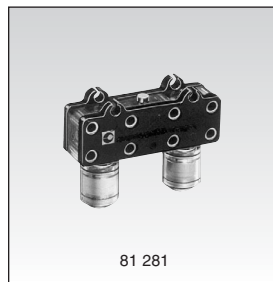
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



"Microvalve" series position detectors



81 280



81 281

Part numbers

Version	NO (grey body color)	81 280 010	81 281 010	—
	NC (black body color)	81 280 510	81 281 510	81 283 510 not shown
Features		Horizontal output	Vertical output	Rear connection by screw

Symbol

NO



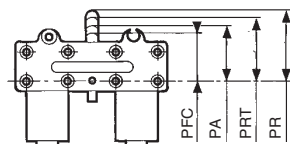
NC



Characteristics

Operating pressure	psi(bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Orifice diameter	inches(mm)	0.106 (2.7)	0.106 (2.7)	0.106 (2.7)
Flow at 6 bars 90 psi (6 bar)	cfm(Nl/min)	7 (200)	7 (200)	4.8 (138)
Operating force 90 psi (6 cm)	oz. (N)	50 (15)	50 (15)	50 (15)
Effective travel	inches(mm)	0.04" (1)	0.04" (1)	0.04" (1)
Push-in connection for O.D. semi-rigid tubing (NFE 49100)	inches(mm)	5/32" (4)	5/32" (4)	5/32" (4)
Operating temperature	°F(°C)	+20 > +120 (-5 > +15)	+20 > +120 (-5 > +15)	+20 > +120 (-5 > +15)
Mechanical life	operations	5 million	5 million	5 million
Weight	grams	14	14	20

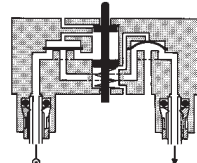
Principle of operation



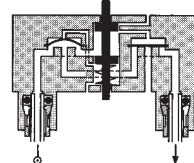
Actuation positions :

PFC : End of travel position.....	0.423" (10.75)
PA : Operating position (max output kV).....	0.449" (11.4)
PRT : Release position (max. exhaust kV).....	0.463" (11.75)
PR : Rest position.....	0.488" (12.4)

NC



NO



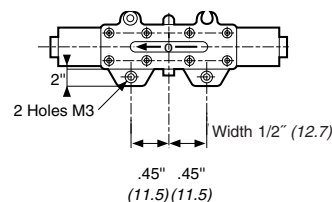
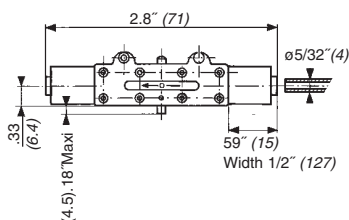
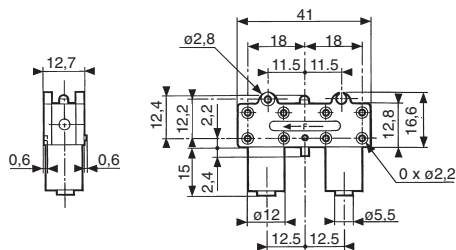
Non-connectable exhaust port is on the "output" side.

Dimensions

81 281 010 - 81 281 510

81 280 010 - 81 280 510

81 283 510



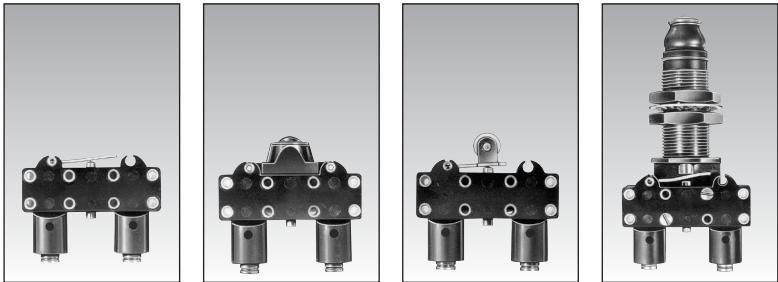
Use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products Standard products, non stocked 1 Part number Example : "Microvalve" series position detectors - 81 280 010

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

“Microvalve” series position detectors



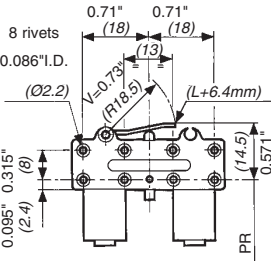
Part numbers				
Features		Short lever	With ball	With roller
Version	NC	Vertical output	81 281 502	81 281 504
			81 281 509	Threaded barrel Plunger for 5/8" hole 81 737 501
Symbol				



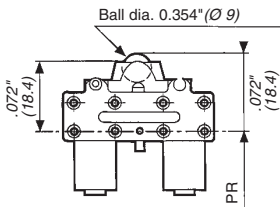
Characteristics					
Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Orifice diameter	inches(mm)	0.04 (2.7)	0.04 (2.7)	0.04 (2.7)	0.04 (2.7)
Flow at 90 psi (6 bars)	cfm(Nl/min)	7 (200)	7 (200)	7 (200)	7 (200)
Operating force at 90 psi (6 bars)	oz(N)	50 (15)	50 (15)	50 (15)	83 (25)
Effective travel	inches(mm)	0.04" (1)	0.04" (1)	0.04" (1)	0.04" (1)
Push-in connection for semi-rigid tubing O.D. Inches(NFE 49100)	(mm)	5/32" (4)	5/32" (4)	5/32" (4)	5/32" (4)
Operating temperature	°F (°C)	+20>.+120(-5>+50)	+20>.+120(-5>+50)	+20>.+120(-5>+50)	+20>.+120(-5>+50)
Mechanical life	cycles	5 million	5 million	5 million	5 million
Weight	grams	16	18	18	90

Dimensions

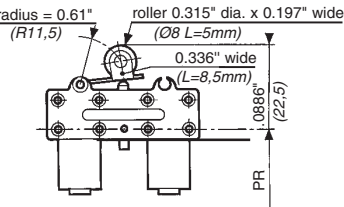
81 281 502



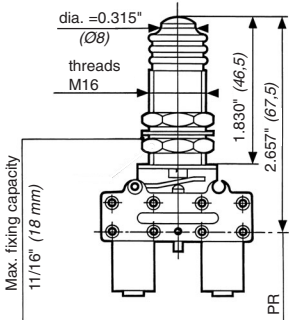
81 281 504



81 281 509



81 737 501

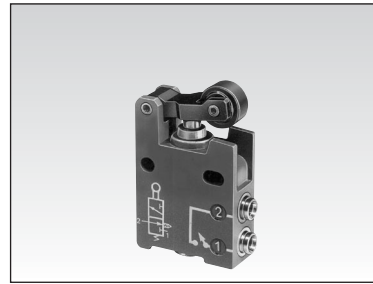


Actuation positions :
PR : Rest position

Use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products, non stocked
	1 Part number Example : "Microvalve" series position detectors - 81 280 002

"Miniature" series position detectors



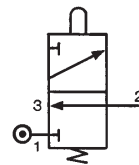
1

Part numbers

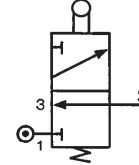
Version	Push-in connection for semi-rigid tubing (NFE 49100)				
NC	Ø 4 silenced exhaust	81 921 501	81 921 701	81 921 702	81 921 707
	M5 connectable exhaust	—	—	—	—
	Ø 4 connectable exhaust *	—	—	—	—
NO	Ø 6 connectable exhaust *	—	—	—	—
	Ø 4 silenced exhaust	—	—	—	—
Control	Ø 6 silenced exhaust	—	—	—	—
		Simple plunger	Lever with plastic roller	Lever with roller bearing	Lever with one-way trip plastic roller

Symbol

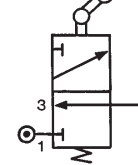
NC



NC



NC

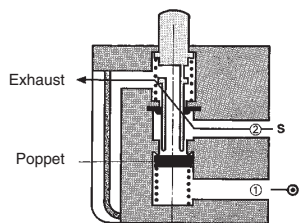


Characteristics

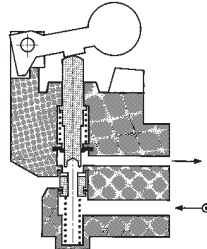
Operating pressure	psi (bar)	2 >120 (0.18>8)	2 >120 (0.18>8)	2 >120 (0.18>8)	2 >120 (0.18>8)
Orifice diameter	inches (mm)	0.106 (2.7)	0.106 (2.7)	0.106 (2.7)	0.106 (2.7)
Flow at 90 psi (6 bars)	cfm (Nl/min)	7 (200)	7 (200)	7 (200)	7 (200)
Actuation force at 90 psi (6 bars)	oz (N)	63 (18)	63 (18)	63 (18)	63 (18)
Circuit function : NC		—	—	—	—
Circuit function: NO		—	—	—	—
Operating temperature	°F (°C)	+20>+120 (-5>+50)	+20>+120 (-5>+50)	+20>+120 (-5>+50)	+20>+120 (-5>+50)
Mechanical life	operations	10 million	10 million	10 million	10 million
Weight	grams	62	75	80	77

Principle of operation

NC



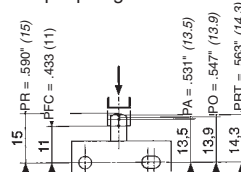
NO



Actuation travel

Vertical attack

Simple plunger

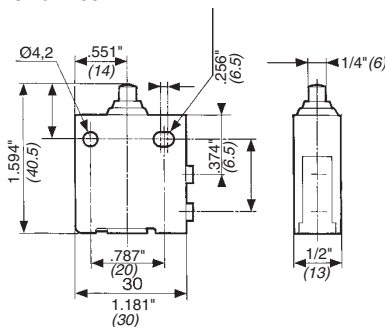


Actuation positions :

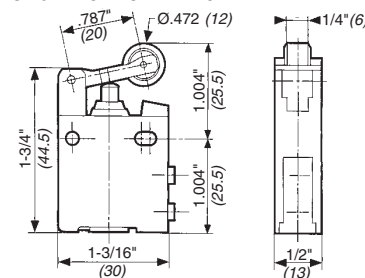
- PA : Operating position (max output CV)
- PFC : End of travel position
- PO : Mid-position closed (no exhaust, no outlet)
- PRT : Release position (max exhaust CV)
- PR : Rest position

Dimensions

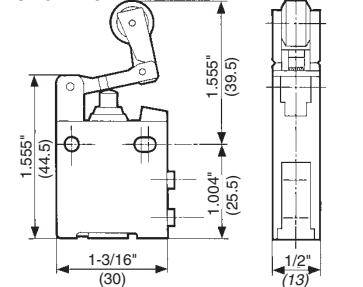
81 921 501



81 921 701 - 81 921 702



81 921 707



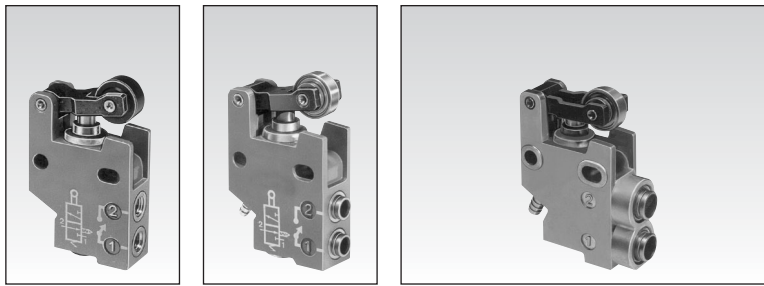
Use (metric) dimensions for critical data

Other information

* with barb for tube 0.106" (2.7) I.D. AND 5/32" (4) O.D.

Products and specifications subject to change without notice.

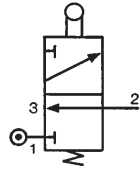
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



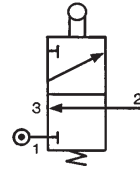
1

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

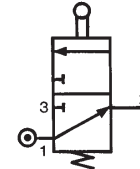
NC



NC



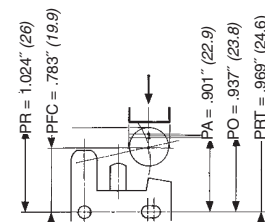
NO



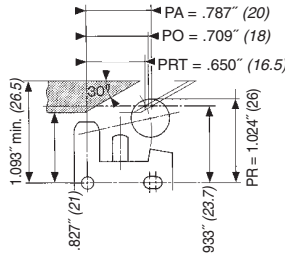
2 > 120 (0.18 > 8)	2 > 120 (0.18 > 8)	2 > 120 (0.18 > 8)	2 > 120 (0.18 > 8)
0.106 (2.7)	0.106 (2.7)	0.106 (2.7)	0.106 (2.7)
7 (200)	7 (200)	7 (200)	7 (200)
63 (18)	63 (18)	63 (18)	63 (18)
+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
10 million	10 million	10 million	10 million
75	80	100	100

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

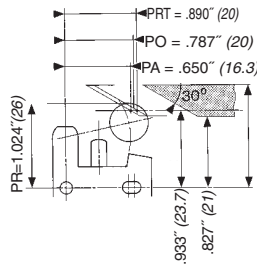
With lever



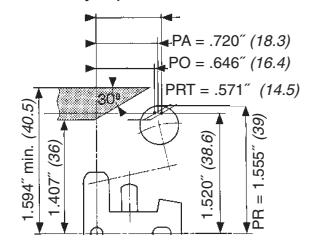
With lever



With lever



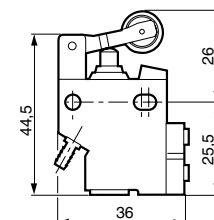
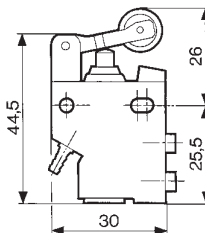
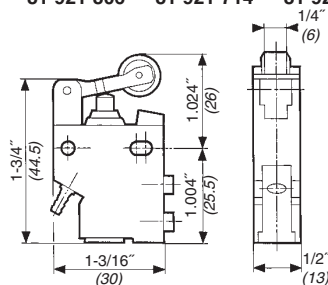
One-way trip lever



81 921 806 - 81 921 714 - 81 921 911 - 81 921 912

81 921 714

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



Use (metric) dimensions for critical data

To order, specify :

Standard products

1 Part number

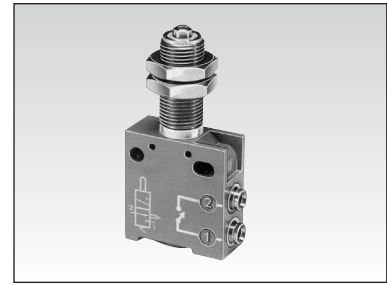
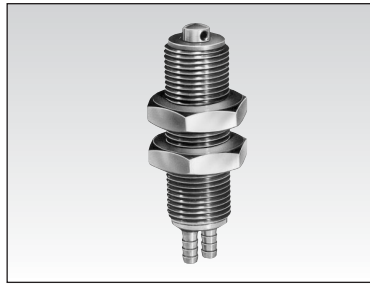
Standard products,
non stocked

Example : "Miniature" series position detectors 81 921 501

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

"Adjustable stop" series position detectors



Part numbers

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

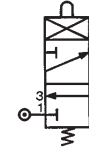
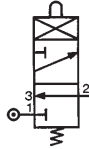
81 923 001

Barb for tube with 5/32" (4mm) O.D. x
0.106" (2.7mm) I.D.

81 921 505

Push-in connector for tube with 5/32"
(4mm) O.D.

Symbol

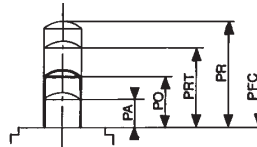
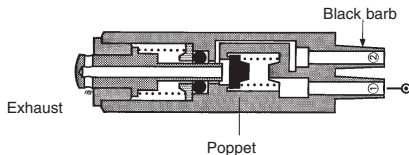


Characteristics

Operating pressure	psi (bar)	2 > 120 (0.1 > 8)	2 > 120 (0.1 > 8)
Orifice diameter	inches (mm)	0.079" (2)	0.106" (2.7)
Flow at 90 psi (6 bar)	cfm (Nl/min)	5 (130)	7 (200)
Actuation force at 90 psi (6 bar)	oz (N)	56 (16)	94 (21)
Circuit function: NC			
Max. load: without shock	lbs (daN)	2,200 (1000)	2,200 (1000)
Will stop a 2 1/2" Ø cylinder @ 90 psi: (6 bar) supply			
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
Mechanical life	cycles	10 million	10 million
Weight	(grams)	27	90

Principle of operation

Actuation positions			
PA : Operating position (max output Cv)	inches (mm)	0.016 (0.4)	0.028 (0.7)
PFC: End of travel position	inches (mm)	0 (0)	0 (0)
PO : Mid-point closed (no exhaust, no outlet)	inches (mm)	0.035 (0.9)	0.040 (1)
PRT : Release position (max. exhaust kV)	inches (mm)	0.059 (1.5)	0.059 (1.5)
PR : Rest position	inches (mm)	0.118 (3)	0.118 (3)

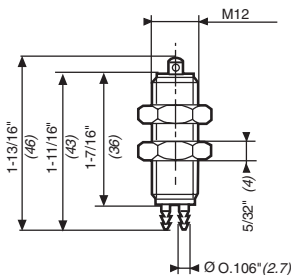


Actuation positions :

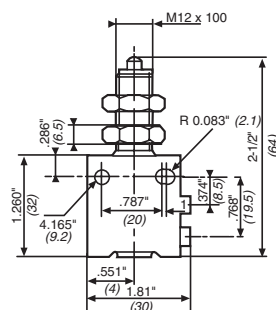
PA : Operating position (max output Cv)
PFC : End of travel position
PO : Mid-position closed
(no exhaust, no outlet)
PRT : Release position
(max exhaust Cv)
PR : Rest position

Dimensions

81 923 001



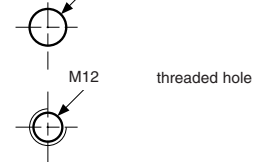
81 921 505



Mounting

This should be as close
as possible to the
plunger

(Ø12.5) 1/2" dia. mounting hole



Use (metric) for critical data.

Other information

To order, specify :

Standard products

1 Part numbers

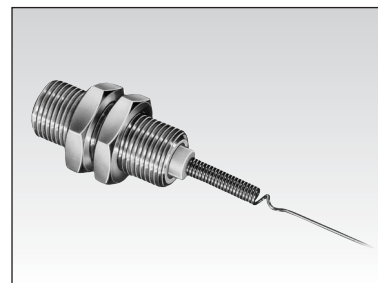
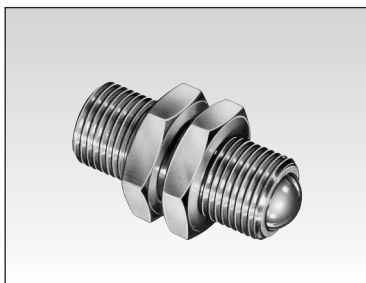
Standard products,
non stocked

Example : "Adjustable stop" series position
detectors - 81 923 001

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

“Sensitive” position detectors



Part numbers

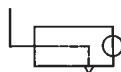
Version

81 512 201
with ball

81 512 401
with wire

Symbol

1



Characteristics

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

Life at 90 psi (6 bars)

Actuation force at 90 psi (6 bars)

Supply provided by leak sensor relay

Operating temperature

Weight

inches (mm)

5/32" (4)

10 million

2.77 (0.8)

°F (°C)
+20>+120 (-5>+50)

24.5

5/32" (4)

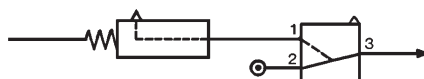
10 million

0.09 (0.025)

°F (°C)
+20>+120 (-5>+50)

23.5

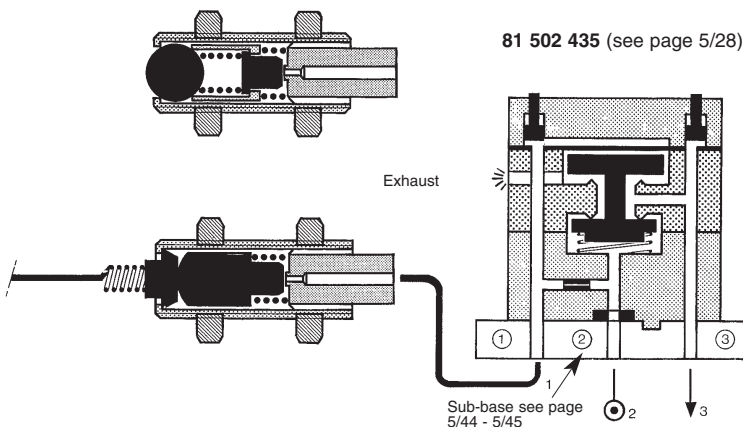
Connection



Principle of operation

Supplied at industrial pressure, the relay produces a permanent bleed at its input port.

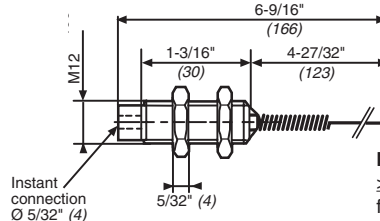
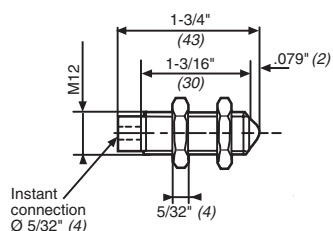
A sensor shutting off this bleed causes the relay to switch.



Dimensions

81 512 201

81 512 401



Note:
≥ 8° deflection
for actuation

Note: Clearance hole of Ø 1/2" (12.5) or threaded hole M12 required for mounting.

use (metric) for critical data

Other information	To order, specify :
	Standard products 1 Part number Example : "Sensitive" position detectors - 891 592 201

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

"Compact" series position detectors



1

Part numbers

Features

Version

Direct acting
81 922 401

Roller plunger with
unthreaded barrel

Rotary actuator
81 922 205

Right-hand rotary
head with roller
lever (CNOMO)

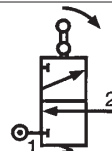
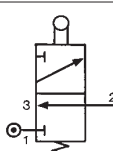
Rotary actuator
81 922 010

Programmable
rotary head
without lever

Rotary actuator
81 922 210

Programmable
rotary head
without lever

Symbol



Characteristics

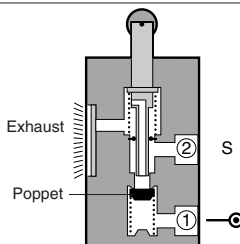
	BSP		—	1/8		—	1/8
Connection	push-in for semi-rigid tubing O.D.(NFE 49100)	inches (mm)	5/32" (4)	—	5/32" (4)	—	—
Operating pressure	psi (bar)		2 > 120 (0.1>8)	2 > 120 (0.1>8)	2 > 120 (0.1>8)	2 > 120 (0.1>8)	2 > 120 (0.1>8)
Bore diameter	inches (mm)		0.118 (3)	0.118 (3)	0.118 (3)	0.118 (3)	0.118 (3)
Flow at 90 psi (6 bars)	cfm (Nm ³ /h)		7 (12)	7 (12)	7 (12)	7 (12)	7 (12)
Activation force at 90 psi (6 bars)	oz (daN)		90 (2.5)	90 (2.5)	90 (2.5)	90 (2.5)	90 (2.5)
Circuit function: NC			•	•	•	•	•
Mechanical life	operations		10 million	10 million	10 million	10 million	10 million
Silenced or connectable (1/8) exhaust			•	•	•	•	•
Operating temperature	°F (°C)		+20>+120 (-5>+50)	+20>+120 (-5>+50)	+20>+120 (-5>+50)	+20>+120 (-5>+50)	+20>+120 (-5>+50)
Weight	(grams)		150	193	175	175	175

Accessories

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

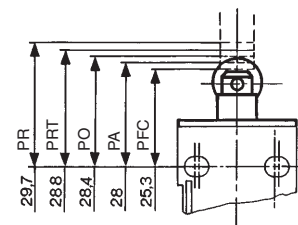
2

Principle of operation



Vertical attack

Detectors with roller plunger with unthreaded barrel.

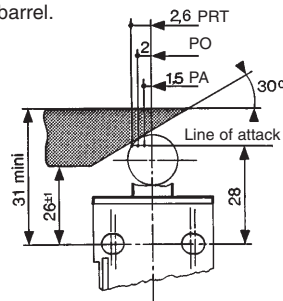


Actuation positions :

- 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

Horizontal attack

Detectors with roller plunger with unthreaded barrel.



Other information

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

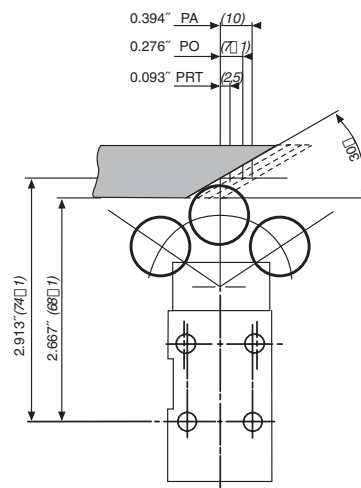
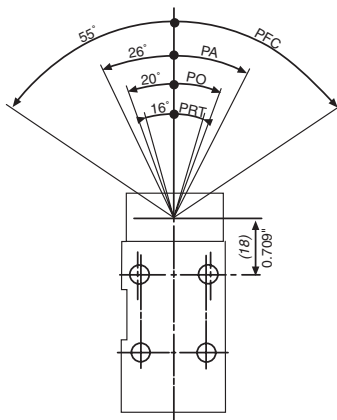
Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Rotary actuator

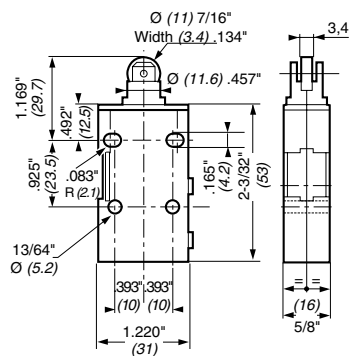
Detectors with levers

81 922 - 81 922 0 - 81 922 2

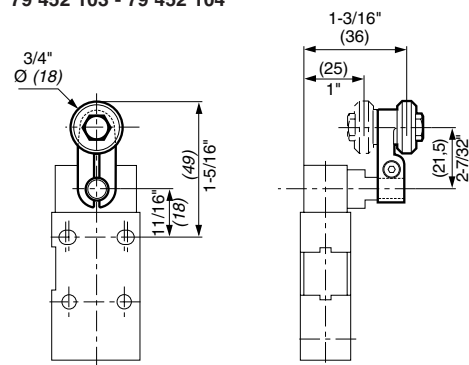


Dimensions

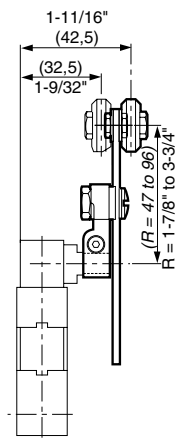
81 922 401



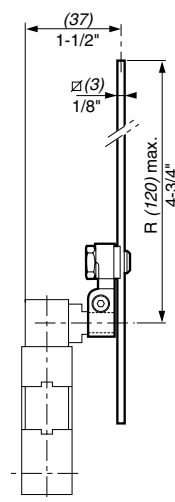
81 922 205 - 81 922 0 - 81 922 2
79 452 103 - 79 452 104



79 452 123 - 79 452 124



79 452 133



Use (metric) dimensions for critical data.

To order, specify :

☐	Standard products
☐	Standard products, non stocked

1

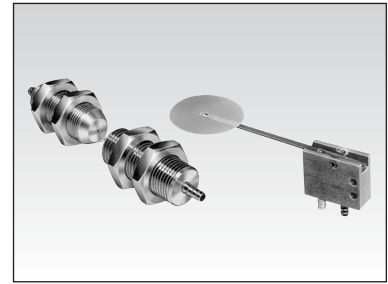
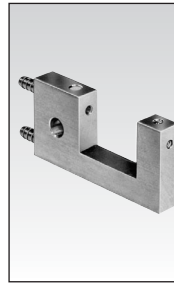
Part number

2

Accessory

Example : "Compact" series position detectors 81 922 010 - Lever with plastic roller 79 452 103

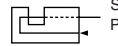
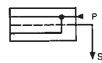
Position detectors



Part numbers

	81 371 401	81 372 201	81 372 401	81 372 901
detector	proximity	fixed gap	adjustable gap	palette
Symbol				

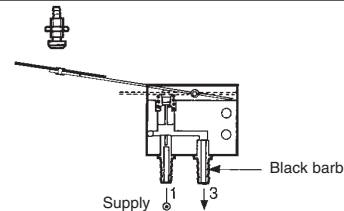
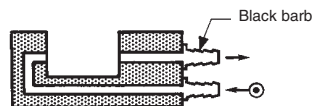
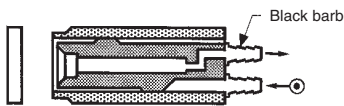
1



Characteristics

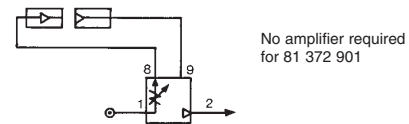
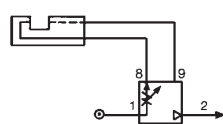
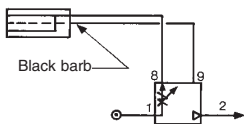
Detection distance	inches (mm)	1/4 > 3/8 (6 > 10)	11/16" (18)	4 (100)	—
Supply pressure	psi (bar)	8 > 40 (0.5 > 2.5)	8 > 40 (0.5 > 2.5)	8 > 40 (0.5 > 2.5)	—
Minimum output pressure	psi (mbar)	0.02 (1)	0.02 (1)	0.02 (1)	—
Unlimited life (static component)		●	●	●	—
Operating temperature	°F (°C)	-5 > +160 (-20 > +70)	-5 > +160 (-20 > +70)	-5 > +160 (-20 > +70)	-5 > +160 (-20 > +70)
Consumption at supply pressure of:	cfm (NI/h)	0.5 (800)	0.05 (70)	0.06 (100)	—
	cfm (NI/h)	1.5 (2500)	1.30 (2244)	0.45 (700)	—
Barb connection for semi-rigid tubing (NFE 49100)	inches(mm)	5/32" O.D. x 0.106" I.D. (2.7 x 4)	5/32" O.D. x 0.106" I.D. (2.7 x 4)	5/32" O.D. x 0.106" I.D. (2.7 x 4)	5/32" O.D. x 0.106" I.D. (2.7 x 4)
Operating pressure	nozzle sensor	psi (bar)	—	—	30 to 120 (2 to 8)
	@ 8" 1" (200 mm)	psi (bar)	—	—	30 to 120 (2 to 8)
	@ 4" (100 mm)	psi (bar)	—	—	15 to 60 (1 to 4)
Flow	nozzle at 30 psi (2 bar)	cfm (NI/h)	—	—	0.20 (320)
	sensor at 30 psi (2 bar)	cfm (NI/h)	—	—	0.20 (320)
Trip force of	at 30 psi (2 bar) supply	oz (N)	—	—	0.11 (0.03)
palette	at 90 psi (6 bar) supply	oz (N)	—	—	0.33 (0.08)
Sensor consumption for relay supply at 90 psi (6 bar)	cfm (NI/min)	—	—	—	0.18 (5)
Weight	grams	36	9	36	14

Principle of operation



Connection

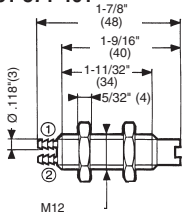
For use with amplifier on page 5/29



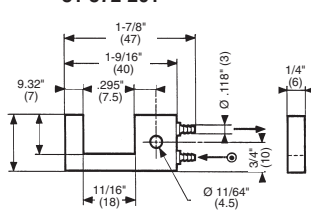
No amplifier required for 81 372 901

Dimensions

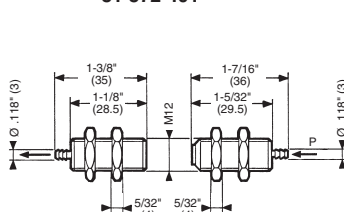
81 371 401



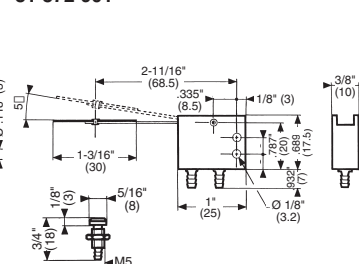
81 372 201



81 372 401



81 372 901



Use (metric) dimensions for critical data.

Other information

To order, specify :

Standard products

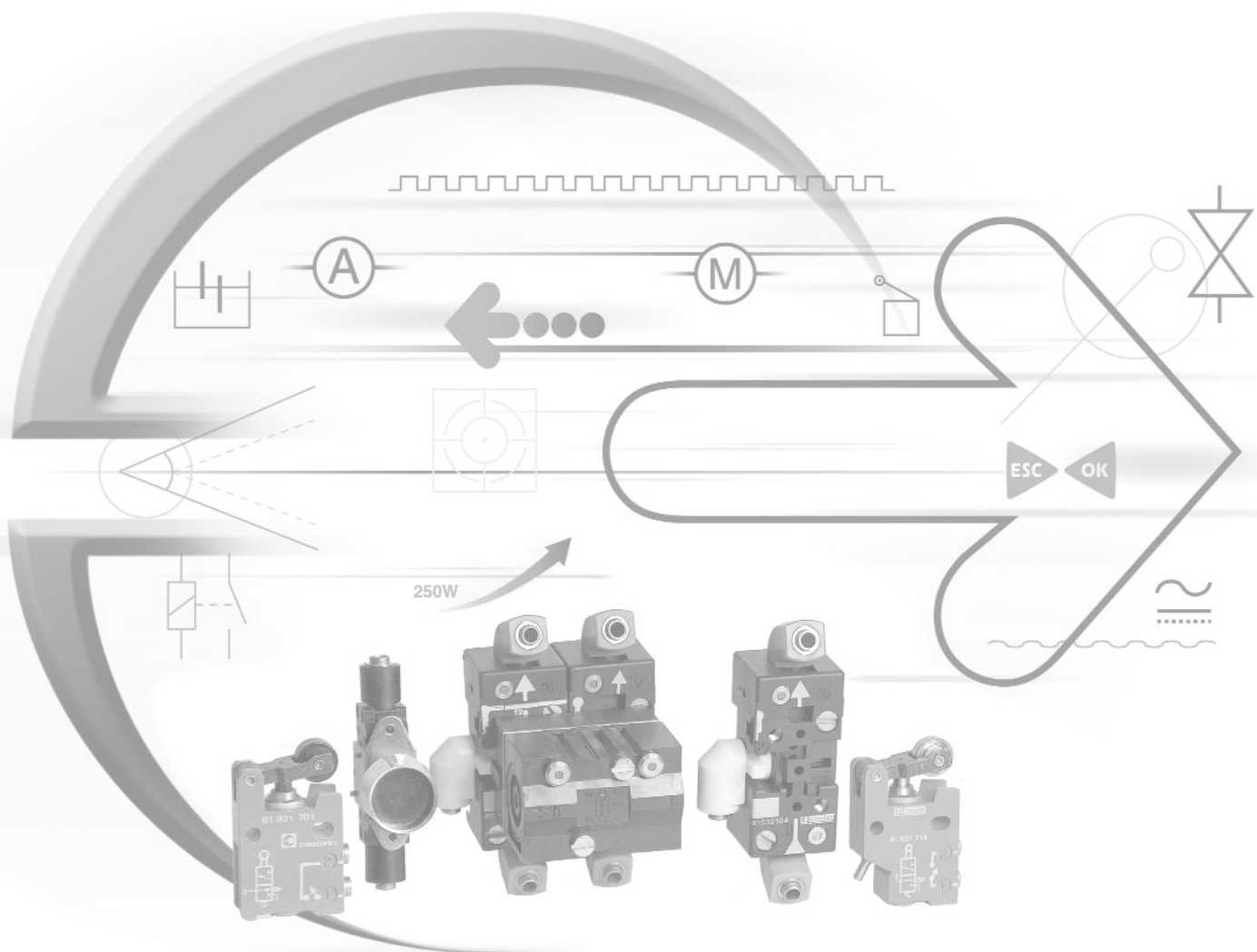
1 Part number

Example : Position detectors - 81 371 401

Standard products, non stocked

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Pressure Switches Amplifiers

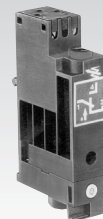


Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Pressure switches

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



1

Part numbers

Pressure and vacuum switches	81 513 552	81 513 502	81 513 501	81 513 522
Mounting	DIN rail EN 50022	DIN rail EN 50022	DIN rail EN 50022	DIN rail EN 50022
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)	mm	Ø 4 ext.	Ø 4 ext.	Ø 4 ext.	Ø 4 ext.
	Tapped BSP via connector	IEC 529	—	—	—	—
Protection			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	bar	0.5	0.5	—	—
	at 2 bars	bar	0.6	0.6	—	—
	at 4 bars	bar	0.8	0.8	—	—
	at 6 bars	bar	1	1	—	—
	max. 200 mb		—	—	•	—
	max. 250 mb		—	—	—	•
Pressure to break			—	—	—	—
Mechanical life (operations)			10 ⁶	10 ⁶	10 ⁶	10 ⁶
Contact rating (V resistive)			5A - 220-230 V	5A - 220-230 V	5A - 220-230 V	5A - 220-230 V
Wire cross-section	mm ²		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 I W2	V4 83 170 4 I W2	V4 83 170 4 I W2	V4 83 170 4 I W2
UL and cUL approval			MH15213 (R)	MH15213 (R)	MH15213 (R)	MH15213 (R)

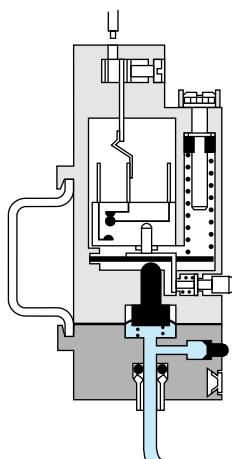
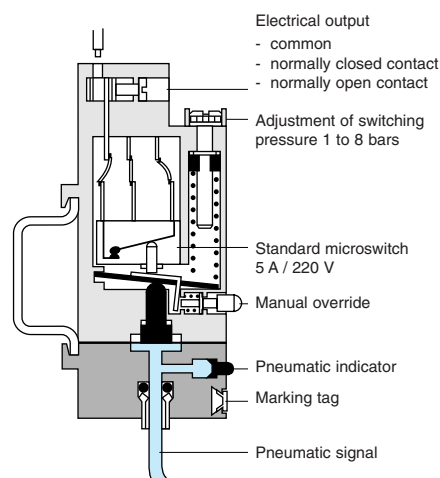
Operation

Pressure operated

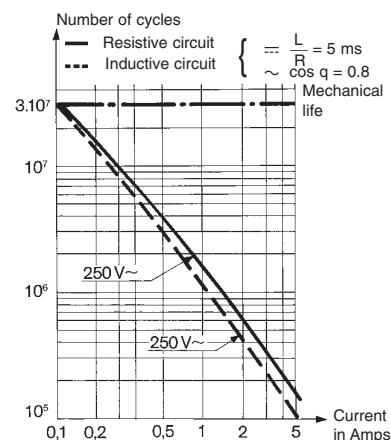
Vacuum operated

Electrical life

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



For continuous vacuum applications, please consult us.

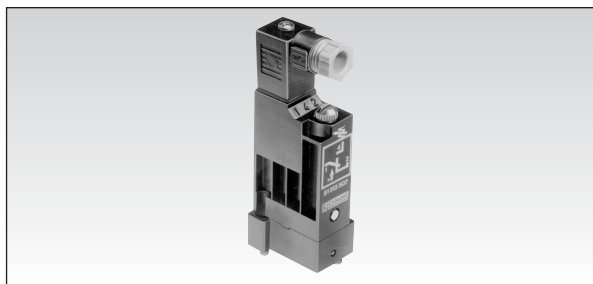


Other information

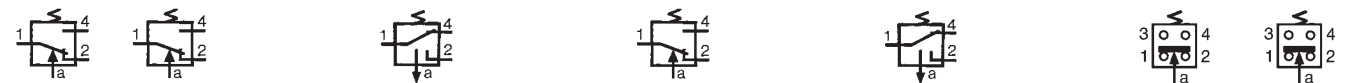
- On request :
- Microswitch V4 ref. 83 170 0 I W2 high current
 - Microswitch V4 ref. 83 170 9 I W2 low current

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



81 513 516	81 513 510	81 513 527	81 513 533	81 513 523	81 509 080	81 509 085
Base mounted page 5/44	Base mounted page 5/45	Base mounted page 5/44	2 screws M4	2 screws M4	Base mounted page 5/44	Base mounted page 5/45
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 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	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 ⁶	10 ⁶
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

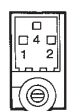
81 513 552 - 81 513 502
81 513 501 - 81 513 522

Pressure switch with connector

81 513 516 - 81 513 510
81 513 527

81 516 082

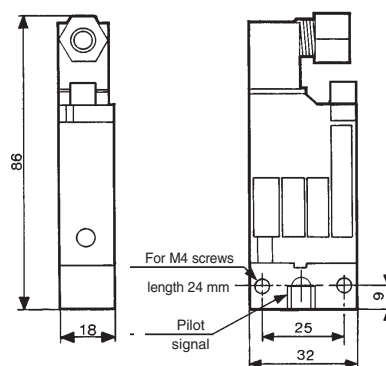
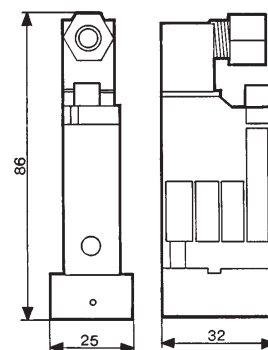
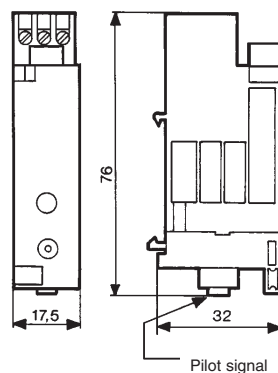
81 513 533
81 513 523



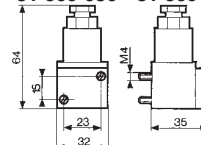
81 513 510 - 81 513 521
81 513 516 - 81 513 527



81 513 533
81 513 523 - 81 513 533



81 509 080 - 81 509 085



To order, specify :

Standard products

1 Part number

Example : Pressure and vacuum switches 81 513 552

Standard products,
non stocked

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Adjustable pressure switches (manostats)



Counter balance leakage

Yes

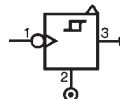
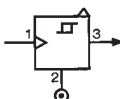
Yes

Part numbers (and adjustment ranges)

Adjustment range	0.7 to 8 psi (50 to 500 mb)	81 505 140	81 502 140	
	2 to 35 psi (0.1 to 2.5 b)	81 505 150	81 502 150	
	30 to 120 psi (2 to 8 b)	81 505 160	81 502 160	
Version		Positive output (N.C.)	Negative output (N.O.)	
Accuracy	0.7 to 8 psi (50 to 500 mb)	10 %	10 %	
	2 to 35 psi (0.1 to 2.5 b)	4 %	4 %	
	30 to 120 psi (2 to 8 b)	4 %	4 %	

1

Symbol

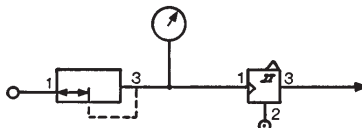


Characteristics

Orifice diameter	inches (mm)	0.1 (2.5)	0.1 (2.5)	
Flow at 90 psi (6 bars)	cfm (Nl/min)	6 (170)	6 (170)	
Hysteresis	0.7 to 8 psi (50 to 500 mb)	0.9 (60 mb)	0.9 (60 mb)	
	2 to 35 psi (0.1 to 2.5 b)	1.5 (100 mb)	1.5 (100 mb)	
	30 to 120 psi (2 to 8 b)	5 (320 mb)	5 (320 mb)	
Connection - sub-base page 5/44-5/45				
Operating temperature	°F (°C)	+20>+120 (-5 >+50)	+20>+120 (-5 >+50)	
Mechanical life	operations	3 Million	3 Million	
Weight	grams	160	160	
Relay color		Light gray	Yellow	

Connections

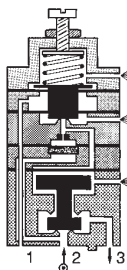
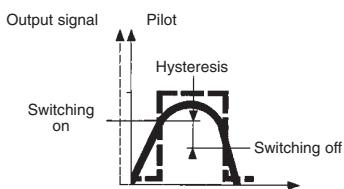
Example of pressure threshold adjustment
(mini-regulator - manostat)



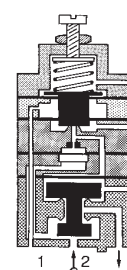
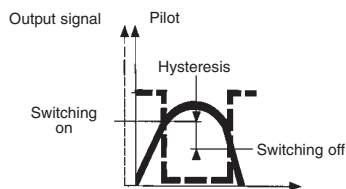
Principle of operation

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

Positive output (N.C.)

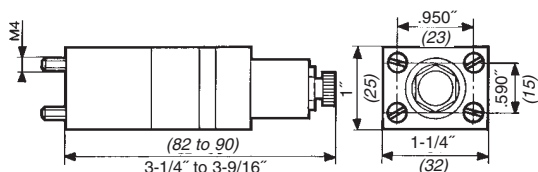


Negative output (N.O.)



Dimensions

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



Use (metric) dimensions for critical data

Other information	To order, specify :
Pressure switches with electrical output on request.	Standard products Standard products, non stocked 1 Part number Example : Adjustable pressure switches (manostats) - 81 505 140

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Adjustable vacuum switches (vacuostat)



Counter balance leakage	Yes	Yes	
Part numbers	81 505 110	81 502 110	81 508 110
	Positive output (N.C.)	Negative output (N.O.)	Electrical output

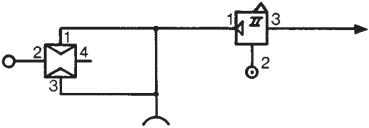
Symbol			
--------	--	--	--

Characteristics

Adjustment range	"/hg (bar)	3 > 23 (-0.1 > -0.9)	3 > 23 (-0.1 > -0.9)	- 0.1 • -0.9
Flow at 6 bars	cfm (Nl/min)	6 (170)	6 (170)	6 (170)
Hysteresis	"/hg (mb)	3 (80)	3 (80)	80
Connection - sub-base page 5/44-5/45				
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	-5 +50
Mechanical life	operations	3 Million	3 Million	3 x 10 ⁶
Weight	grams	160	160	180
Relay color		Light gray	Yellow	

Connections

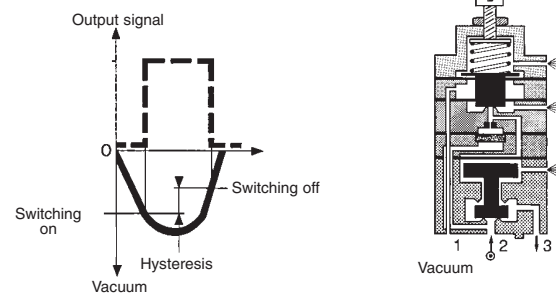
Example of use:
Vacuum handling (vacuum generator,
vacuum pad, vacuostats).



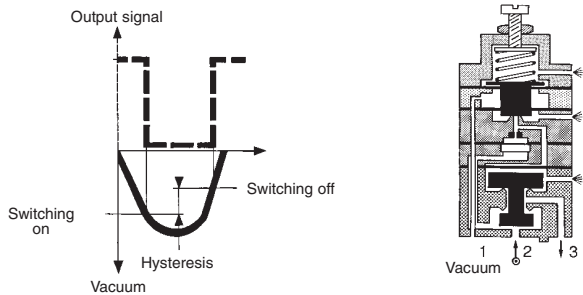
Principle of operation

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

Positive output (N.C.)

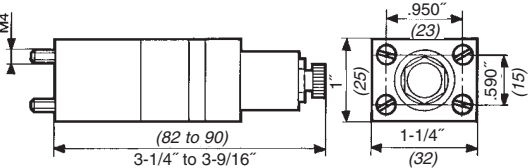


Negative output (N.O.)

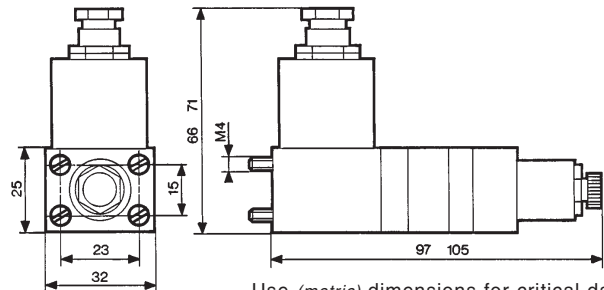


Dimensions

81 502 110 - 81 505 110



81 508 110



Use (metric) dimensions for critical data

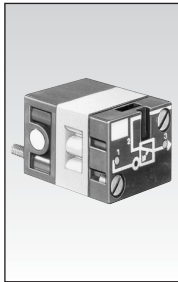
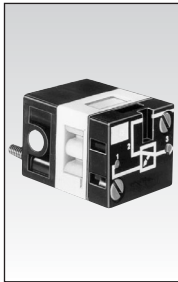
Other information	To order, specify :
	Standard products
	Standard products, non stocked
	Part number
	Example : Adjustable vacuum switches (vacuostat) - 81 505 110

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Leak sensor relay



Part numbers

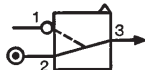
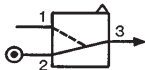
Output

Symbol

81 502 435
Positive (N.C.)

81 505 435
Negative (N.O.)

1

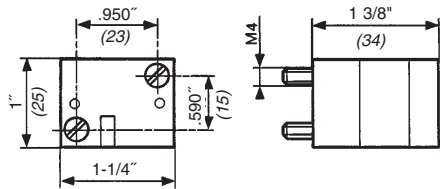


Characteristics

Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Sensor consumption for relay supply at 90 psi (6 bar)	cfm (Nl/min)	0.2 (5)	0.2 (5)
The distance between relay and sensor must be less than 45 ft (15 m) using a 5/32" (.06) O.D. tubing		•	•
Connection - sub-base see page 5/44-5/45		•	•
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
Mechanical life	operations	10 Million	10 Million
Weight	grams	35	35
Relay color		Yellow	Light gray

Dimensions

81 502 435 - 81 505 435

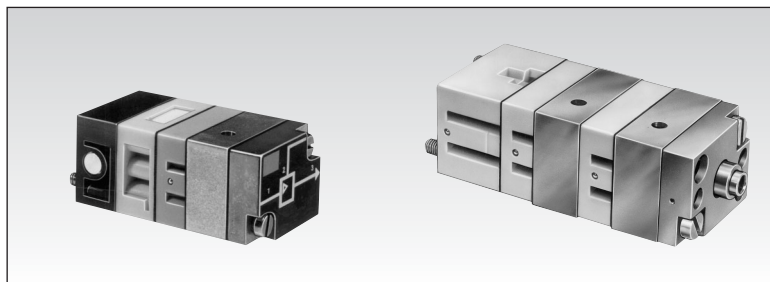


Other information	To order, specify :
Bases for mounting components see page 5/44-5/45	Standard products 1 Part number Example : Leak sensor relay - 81 502 435

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Amplifier relays



Part numbers

Simple amplifiers	81 502 230	81 505 230	—	—
Sensitive amplifiers	—	—	81 502 320	81 505 320
Version	positive (N.C.)	negative (N.O.)	positive (N.C.)	negative (N.O.)

Symbol



Characteristics

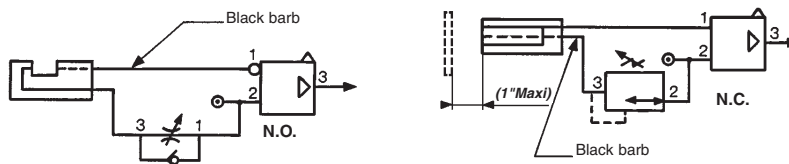
Pressure to make	psi (mb)	0.15>0.30 (10>20)	0.15>0.30 (10>20)	0.15>0.30 (10>20)	0.15>0.30 (10>20)
Operating pressure (non-lubricated air)	psi (bar)	30>120 (2>8)	30>120 (2>8)	30>90 (2>6)	30>90 (2>6)
Orifice diameter	inches (mm)	0.1 (2.5)	0.1 (2.5)	0.1 (2.5)	0.1 (2.5)
Average consumption at 60 psi (mb) (4 bar)	cfm (Nl/min)	0.18 (5)	0.18 (5)	0.18 (5)	0.18 (5)
Permissible overload for 1 hour	psi (mb)	12 (800)	12 (800)	12 (800)	12 (800)
Operating temperature	°F (°C)	+20>+120 (5>+50)	+20>+120 (5>+50)	+20>+120 (5>+50)	+20>+120 (5>+50)
Mechanical life	operations	3 Million	3 Million	3 Million	3 Million
Weight	grams	150	150	185	185
		yellow	light grey	yellow	light grey

Connections

used for gaps up to 1" (25 mm).

The supply to the sensor should be made via a pressure regulator or one-way flow restrictor

Connection - sub-base see page 5/44-5/45.

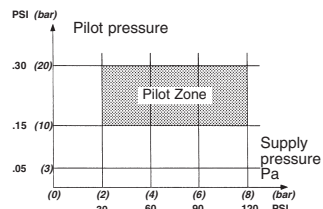


Principle of operation

Simple amplifiers

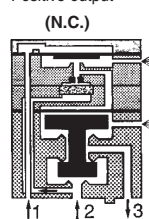
An output at normal industrial pressure is delivered on a low pressure input.

Note: Hysteresis is 20% of the pilot pressure.



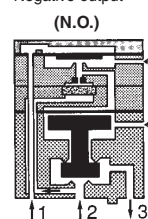
81 502 230

Positive output



81 505 230

Negative output

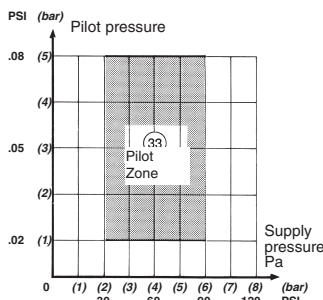


1- pilot
2- supply
3- output

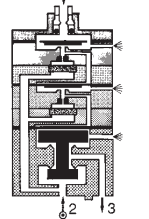
Sensitive amplifiers

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

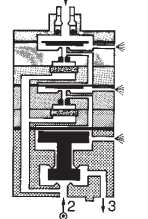
Note: The specifications are given for a supply pressure of 90 psi, and for detection at the mid-point of the gap.



81 502 320

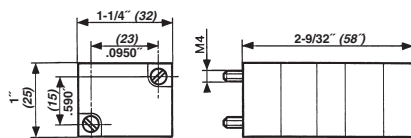


81 505 320

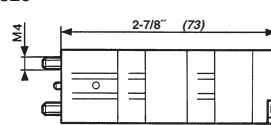
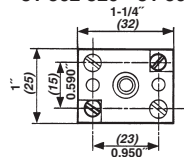


Dimensions

81 502 230 - 81 505 230 - 81 502 320 - 81 505 320



81 502 320 - 81 505 320



Port #1 for sensor: Push-in connection for semi-rigid tubing O.D. 5/32" (Ø 4 mm) (NFE 49100)

Use (metric) dimensions for critical data

Other information

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

To order, specify :

Standard products

1 Part number

Standard products, non stocked

Example : Amplifier relays - 81 502 230

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Amplifier relays



Part numbers

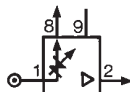
Amplifiers with integral regulator

81 510 001

Version

Positive output (N.C)

Symbol



Characteristics

Pressure to make	psi (mb)	0.008 > 0.023 (0.5 > 1.5)
Reduced pressure supplied at port 8	psi (bar)	8 > 40 (0.5 > 2.5)
Flow through port 8	cfm (Nm ³ /h)	0.06 > 1.50 (0.1 > 2.5)
Consumption of amplifier only	(NI/h)	0.06 > 0.12 (100 > 200)
Permissible overload for 1 hour	psi (mb)	4 (300)
Operating temperature	°F (°C)	+30 to +120 (-5 to 50)
Mechanical life	operations	3 Million
Weight	grams	380

Detectors

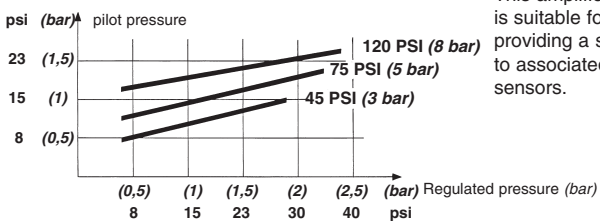
Proximity

Gap

Proximity

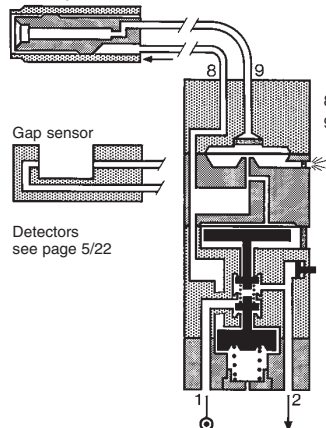
		81 371 401	81 372 201	81 372 401
Nominal range	inches (mm)	5/16" (8)	11/16" (18)	4" (100)
Min. total consumption for detection (8 psi (0.5 b regulated pressure))	cfm (NI/h)	0.52 (880)	0.08 (140)	—
Max. total consumption for short response time (40 psi (2.5 b regulated pressure))	cfm (NI/h)	1.65 (2750)	0.25 (400)	0.55 (920)
Min. detectable nominal sensing distance dimensions ±2	inches (mm)	0.12 (3)	0.06 (1.5)	1/4" (6.5)
	inches (mm)	0.08 (2)	—	—
Max. frequency of use	(Hz)	5	5	5
Force exerted by the jet on the parts to be detected	oz. (N)	0.1 > 2.5 (0.02 > 0.7)	0.05 to 0.11 (0.01 > 0.3)	0.36 (0.1)

Principle of operation



This amplifier is suitable for providing a supply to associated sensors.

Proximity detector

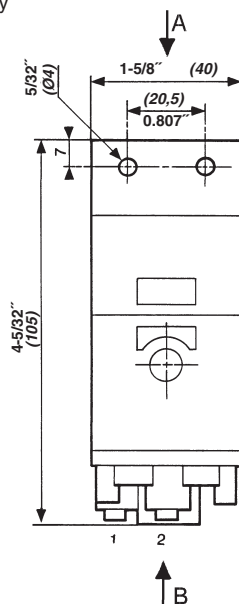


Gap sensor

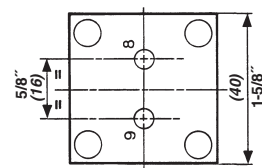
Detectors see page 5/22

Dimensions

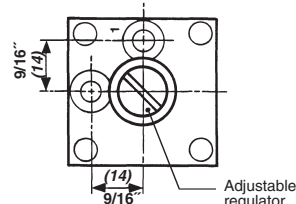
Push-in connection for semi-rigid tubing 5/32" O.D. (Ø 4 mm)(NFE 49100)



Viewed from A



Viewed from B



Note: 81 510 001 must be mounted with regulation screw down

Use (metric) dimensions for critical data

To order, specify :

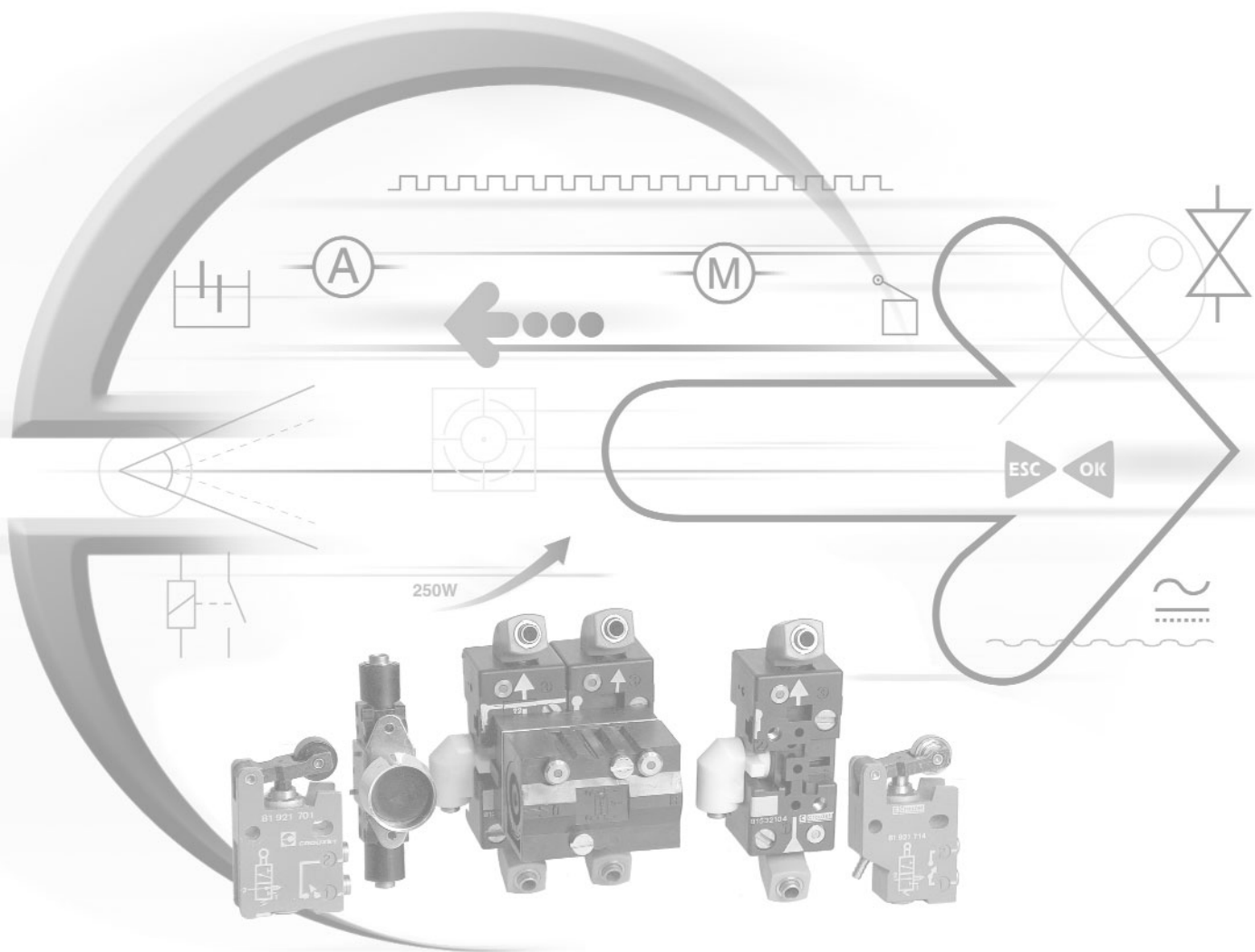
Standard products, non stocked

1 Part number

Example : Amplifier relays 81 510 001

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Pneumatic Logic Components



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Operating fluid

- Compressed air or inert gas

Conditions of use

- Operating pressure 30 to 120 PSI (2 to 8 bars).
- Fluid: Filtered air to 50 microns - non lubricated.
- Operating temperature from 20 to 120° F (-5 to 50° C) under 20° F (5° C) the dew point must be below 5° F (10° C) for the application).
- For optimum performance, the elements should be inter-connected by air supply tubing with an internal diameter of $\geq 0.106"$ (25mm).

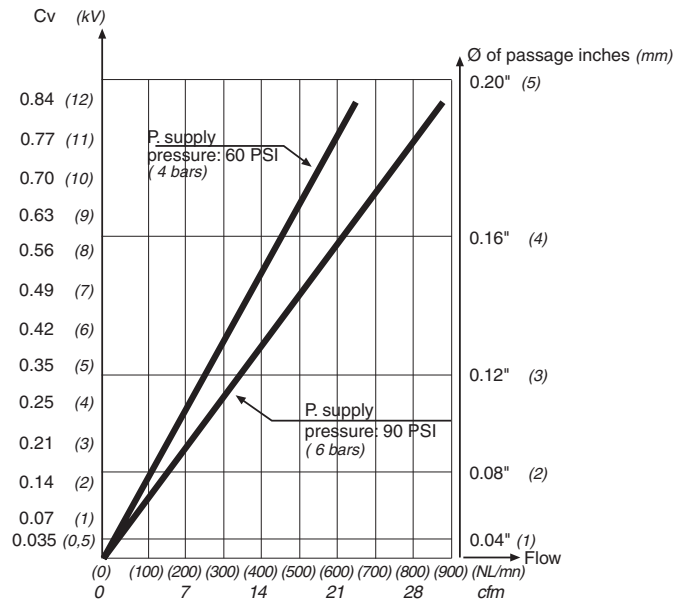
Mounting recommendations

- The elements should be mounted and piped in a clean atmosphere in order to prevent any form of pollution entering the system.
- Minimum torque for element fixing screws: 16"oz (5 cm/kg).
- Maximum torque for element fixing screws: 32"oz (10 cm/kg).

Characteristics common to all elements in the modular system.

- The characteristics have been obtained with a supply pressure at 90 psi (6 bars).
- The flow in cfm (NL/min) is the number of cubic feet (litres) of air at normal atmospheric pressure obtained with the output open to atmosphere and the supply pressure at 60 psi (4 bars).
- The consumption in cfm (NL/min) is the number of cubic feet (litres) of free air necessary for the unit to function.
- Cv (kV) = the flow coefficient of the equipment.
- Mechanical life 10 million and greater.

Flow graphs

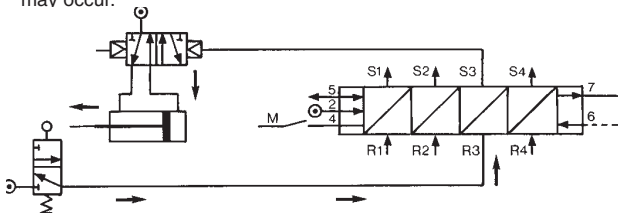


PAC Modules

The principle is to ensure the step by step operation of a sequential cycle.

A system comprises of individual modules which are joined together by means of a sub-base. Each module has a memory which delivers an output signal and receives an input signal.

An indicator on each module allows the operator to monitor the progress of the cycle and identify quickly and easily any faults which may occur.



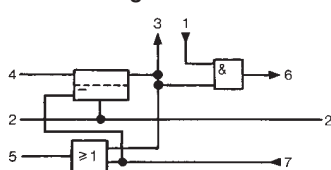
Operation results from the combination of three functions (memory, AND and OR) which constitute each module.

The memory activates the output and gives priority to the reset signal.

The AND element ensures the transition to the next module but only if an input signal is present.

The OR element ensures the resetting of all previously operated modules.

Function diagram

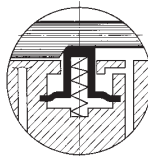


Sequencer module with maintained reset

Brake

This maintains the memory spool in position only when the supply is lost.

Module with auto reset



Brake

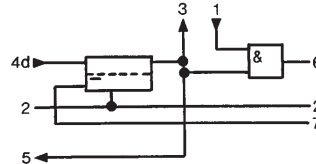
This returns the memory spool to the reset condition only when the supply is lost.

Shift register modules

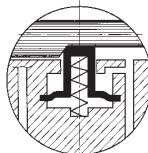
The general principle is to advance the sequencer step by step by command impulses to the inputs of the even steps, alternating with the command impulses to the inputs of the odd steps.

Used for example on a transfer machine to shift the information "bad component" collected at a test-station 'n' steps further along the machine to a reject station.

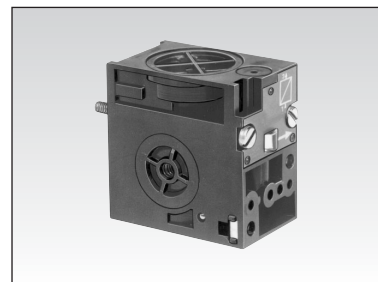
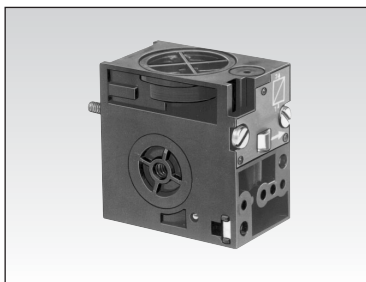
Function diagram



Auto reset sequencer module

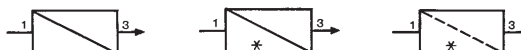


Sequencer modules



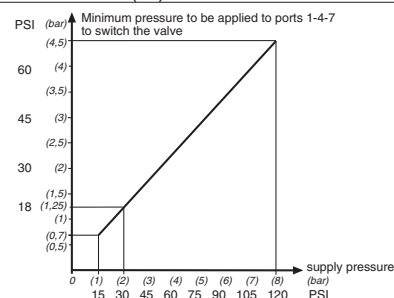
Part numbers

		81 550 001	81 550 201	81 550 601
Versions	PAC sequencer shift register	maintained —	Auto Reset —	— Auto Reset

Symbol

Characteristics

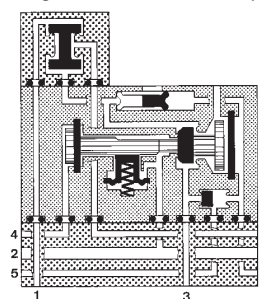
Operating pressure	psi (<i>bar</i>)	30 > 120 (<i>2 > 8</i>)	30 > 120 (<i>2 > 8</i>)	30 > 120 (<i>2 > 8</i>)
Orifice diameter	Inches (<i>mm</i>)	0.106" (<i>2.7</i>)	0.106" (<i>2.7</i>)	0.106" (<i>2.7</i>)
Flow at 90 PSI (<i>6 bars</i>)	cfm (<i>NI/min</i>)	5.25 (<i>150</i>)	5.25 (<i>150</i>)	5.25 (<i>150</i>)
Connection - sub-base page 5/44 - 5/45		●	●	●
Weight	grams	(70)	(70)	(70)



Principle of operation

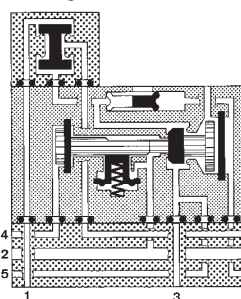
(supplied without logic element. For choice of units see page 5/36 - 5/37 - 5/39 - 5/40 - 5/42)

Programmable Air Controller (PAC) module with maintained reset



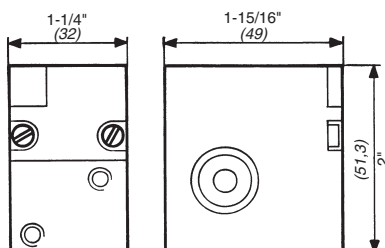
- 1 - Input signal
- 2 - Supply
- 3 - Output signal
- 4 - Start signal
- 5 - In cycle signal
- 6 - End of cycle signal
- 7 - Reset to zero signal

Shift register with maintained reset

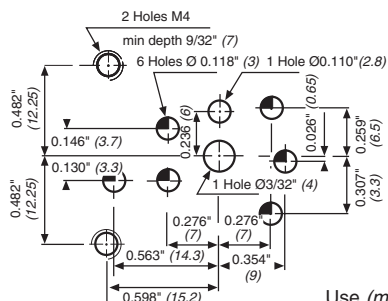


- 1 - Input signal
- 2 - Supply
- 3 - Port plugged
- 4 - Input signal
- 5 - Port plugged
- 6 - Output signal
- 7 - Reset to zero signal

Dimensions



Mounting plan for sequencer



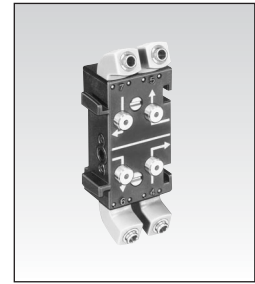
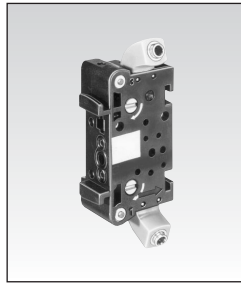
Use (*metric*) dimensions for critical data.

Other information	To order, specify :	
	 Standard products	1 Part number
	 Standard products, non stocked	Example : Sequencer modules 81 550 001

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Sequencer sub-bases



1

Part numbers

Front connecting (DIN-omega)

81 551 101

Sub-base (DIN omega)

81 552 102

End bases - 1 pair
entry & exit modules

81 552 601

Diversion base

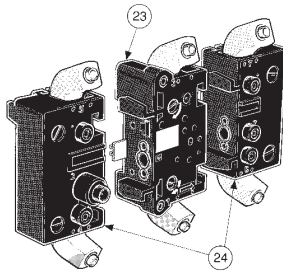
Characteristics

Sub-bases Rotatable connectors
Pressure indicators

Weight	grams	55	135	60

Sequencer connections

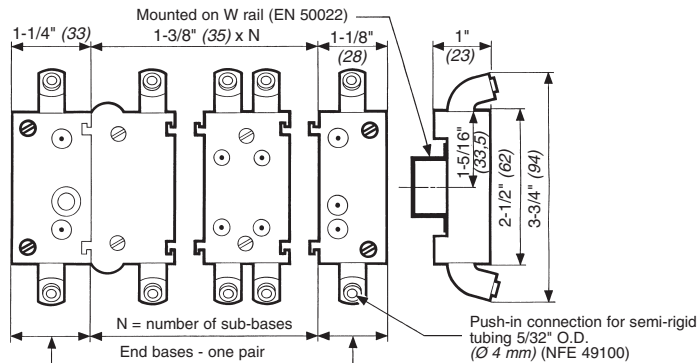
Front connecting



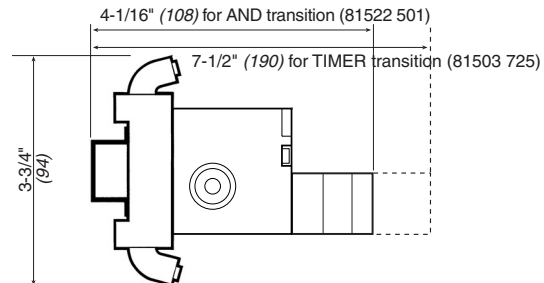
- 1 - Input port (green - port 1) Ø 5/32" (4 mm)
- 2 - Output port (red - port 3) Ø 5/32" (4 mm)
- 3 - Input port, cycle start (green - port 4) Ø 5/32" (4 mm)
- 4 - Output port, in-cycle signal (red - port 5) Ø 5/32" (4 mm)
- 5 - Supply port (yellow - port 2) Ø 1/4" (6.35 mm)
- 6 - Output port, end of cycle (red - port 6) Ø 5/32" (4 mm)
- 7 - Input port, reset to zero (green - port 7) Ø 5/32" (4 mm)
- 8 - Output indicator (red)
- 9 - Input indicator (green)
- 10 - Cycle start indicator at port 4 (green)
- 11 - In-cycle indicator at port 5 (red)
- 12 - Input indicator at port 7 (green)
- 13 - End of cycle indicator at port 6 (red)
- 14 - Supply indicator at port 2 (yellow)
- 15 - Interconnecting ports
- 16 - Mounting screws
- 17 - Engraved arrow to indicate direction of sequence
- 18 - Marking tag
- 19 - Marking tag position
- 20 - Marking tag position
- 21 - Mounting tongue
- 22 - Mounting groove
- 23 - Sub-base
- 24 - End bases

Dimensions

Front connecting



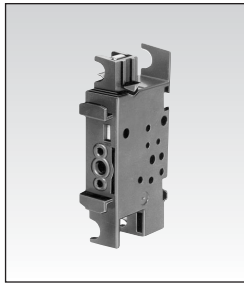
Finished product on DR rail



Use (metric) dimensions for critical data.

Products and specifications subject to change without notice.

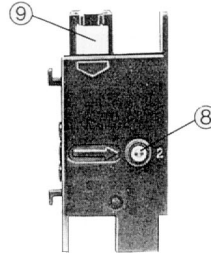
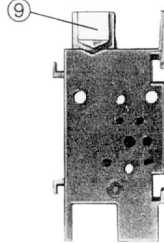
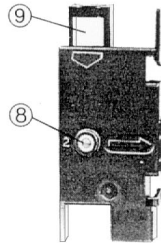
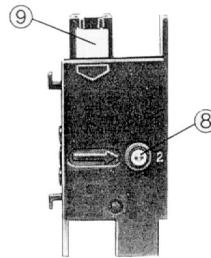
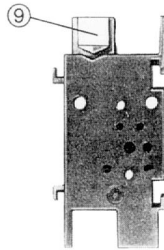
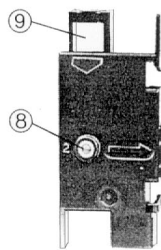
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



81 551 001	81 552 001
—	—
Sub-base (with clips)	End bases - one pair entry & exit modules
—	—
40	120

1

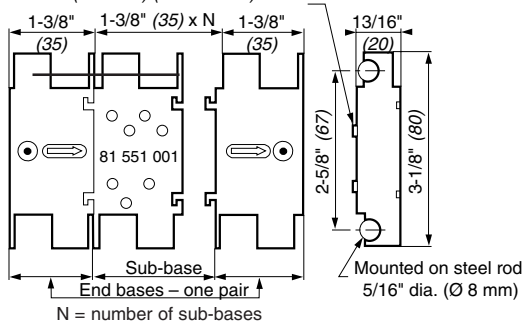
Rear connecting



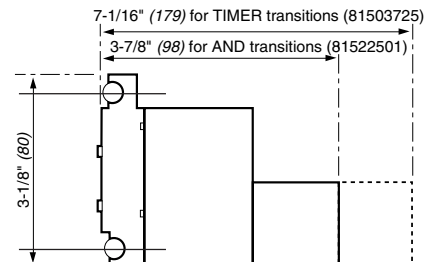
- 1 - Input port (marked port 1)
- 2 - Supply port (Port 2)
- 3 - Output port (Port 3)
- 4 - Cycle start signal port (Port 4)
- 5 - In-cycle signal port (Port 5)
- 6 - End of cycle signal port (Port 6)
- 7 - Reset to zero signal port (Port 7)
- 8 - Indicator at supply port
- 9 - Marking area

Rear connecting

Push-in connection for semi-rigid tubing 5/32" O.D.
(Ø 4 mm) (NFE 49100)



Finished product on 5/16" rods.



Use (metric) dimensions for critical data.

To order, specify :

Standard products

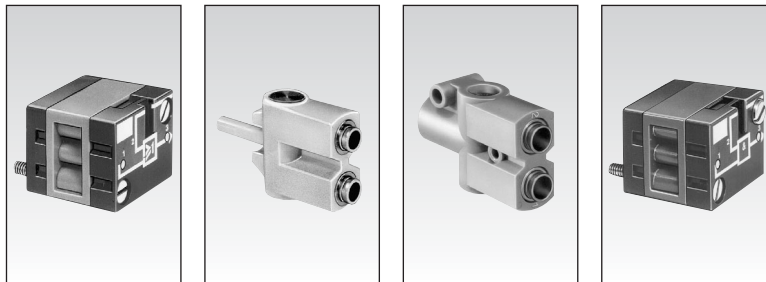
1

Part number

Example : Sequencer sub-bases - 81 551 101

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

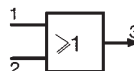


1

Part numbers

Functions	OR	81 521 501	81 540 001	81 540 004	81 522 501
	AND	—	—	—	—
	YES	—	—	—	—
	NOT	—	—	—	—
Version		On sub-base page 5/44 - 5/45	Plug-in Ø 5/32" (4mm)	Plug-in Ø 5/32" (4mm)	On sub-base page 5/44 - 5/45

Symbol



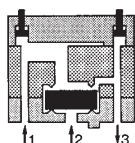
Characteristics

Push-in connection for semi-rigid tubing (NFE 49100) O.D.	Male/Female/Female	—	Ø 5/32" (4 mm)	—	—
Color	Female/Female/Female	—	—	Ø 1/4" (6.35 mm)	—
Operating pressure	psi (bar)	Blue 30 > 120 (2 > 8)	Blue 30 > 120 (2 > 8)	Blue 30 > 120 (2 > 8)	Green 30 > 120 (2 > 8)
Orifice diameter	inches (mm)	0.106" (2.7)	0.106" (2.7)	0.157" (4)	0.106" (2.7)
Flow at 90 PSI (6 bars)	cfm (Nl/min)	6 (170)	6 (170)	7 (200)	6 (170)
Pressure indicator		●	—	—	●
Switching time	ms	—	—	—	—
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
Mechanical life	cycles	10 million	10 million	10 million	10 million
Weight	grams	25	12	25	25

Pilot/pressure curves

P.p : Pilot pressure
P.a : Supply pressure

Principle of operation

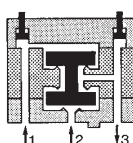


OR element

The output signal "S" is present when a signal at "a" OR "b" is present

$$S = a \text{ OR } b$$

$$S = a + b$$



AND element

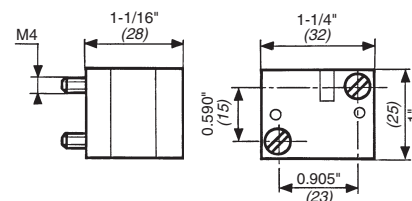
The output signal "S" is present only when signals "a" AND "b" are present simultaneously.

$$S = a \text{ AND } b$$

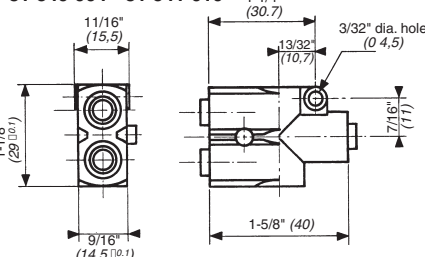
$$S = a \cdot b$$

Dimensions

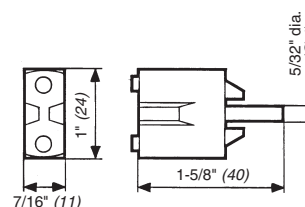
81 521 501 - 81 522 501



81 540 004 - 81 541 010



81 540 001 - 81 541 001



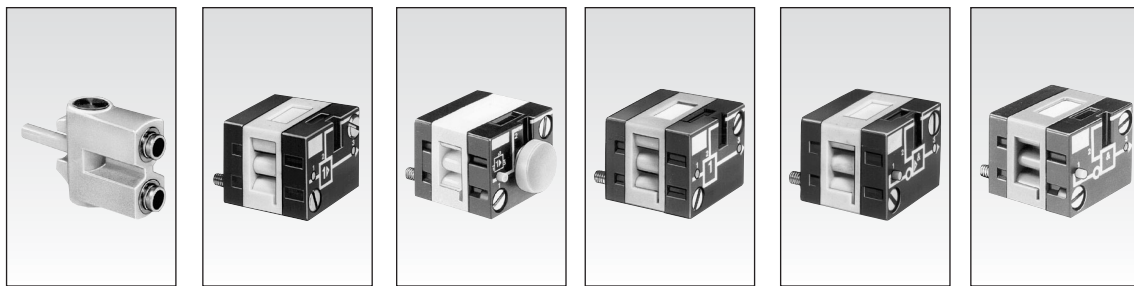
Use (metric) dimensions for critical data.

Other information

See page 4/8 for mounting plan for logic elements.

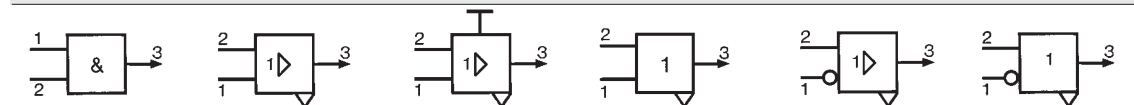
Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

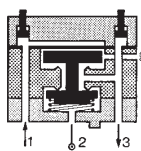
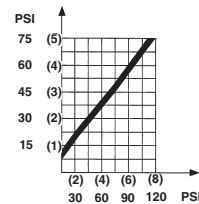
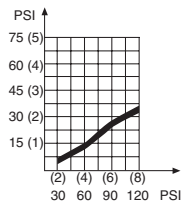
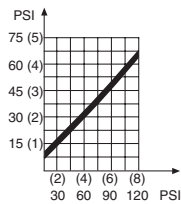
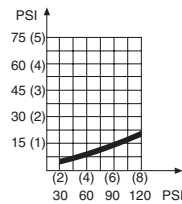


1

81 541 001	81 501 025	81 501 065	81 503 025	81 504 025	81 506 025
Plug-in Ø 5/32" (4)	Standard On sub-base page 5/44 - 5/45	Manual override On sub-base page 5/44 - 5/45	Low-ratio On sub-base page 5/44 - 5/45	Standard and inhibition On sub-base page 5/44 - 5/45	Low-ratio On sub-base page 5/44 - 5/45



Ø 5/32" (4 mm)	—	—	—	—	—
Green	Yellow	Yellow	Orange	Light grey	Dark grey
30 > 120 (2 > 8)	30 to 120 (2 to 8)	30 to 120 (2 to 8)	30 to 120 (2 to 8)	30 to 120 (2 to 8)	30 to 120 (2 to 8)
0.106" (2.7)	0.106" (2.7)	0.106" (2.7)	0.106" (2.7)	0.106" (2.7)	0.106" (2.7)
5-1/4 (150)	6 (170)	6 (170)	6 (170)	6 (170)	6 (170)
—	•	•	•	•	•
<4	<4	<4	<4	<4	<4
+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
10 million	10 million	10 million	10 million	10 million	10 million
13	30	35	30	30	30

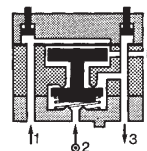


YES element

The output signal "S" is only present when the pilot is present :

$$S = a \text{ YES } b$$

$$S = a$$



NOT element

The output signal "s" is present only if the input signal "a" is NOT present. The output signal is therefore the inverse of the pilot signal.

$$S = \text{NOT } a$$

$$S = \bar{a}$$

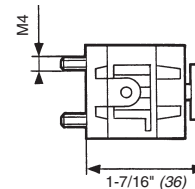
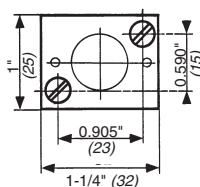
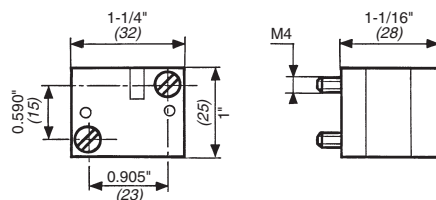
If the supply port is connected to a 2nd input "b", the function obtained is called Inhibition.

$$S = \text{NOT } a \text{ AND } b$$

$$S = \bar{a} \cdot b$$

81 501 025 - 81 503 025
81 504 025 - 81 506 025

81 501 065



Use (metric) dimensions for critical data.

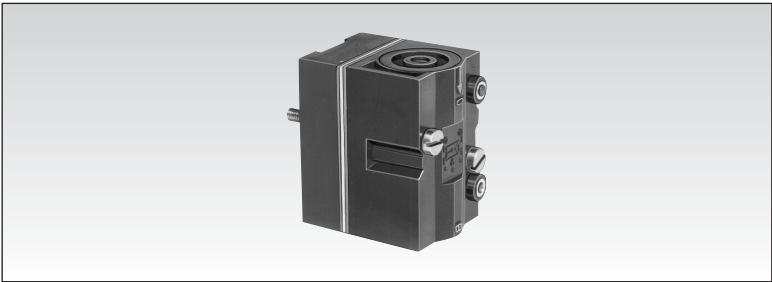
To order, specify :

Standard products	1 Part number
Standard products, non stocked	Example : Logic elements 81 521 501

Products and specifications subject to change without notice.

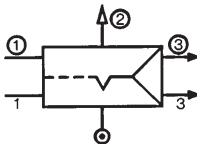
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Memory element



Part numbers			1
Version	81 523 201 With pressure indicator	81 523 601 With pressure indicator and manual override	

Symbol

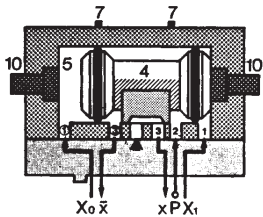


Characteristics			
Color		Black	Black
Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Orifice diameter	inches (mm)	0.06" (2.7)	0.06" (2.7)
Minimum memory pilot pressure	psi (bar)	40 (2.5)	40 (2.5)
Flow at 90 PSI (6 bars)	cfm (Nl/min)	7 (200)	7 (200)
Connection - On sub-base page 5/44 - 5/45			
Switch Time	ms	29	25
Weight	grams	90	90

Principle of operation

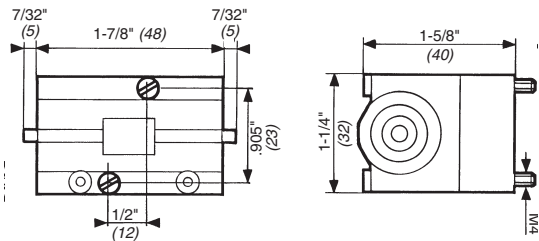
The function is that of a 4/2 valve. The appearance of signal "X1" causes the displacement of the slide valve. The output port "x" is then put under pressure. This state is remembered until the arrival of signal "X0". This signal reverses the slide valve, the output "x" is put under pressure. This state is likewise remembered. The output :

- "x" under pressure indicates that the information in the MEMORY is "X1".
- "x" under pressure indicates that the information in the MEMORY is "X0".

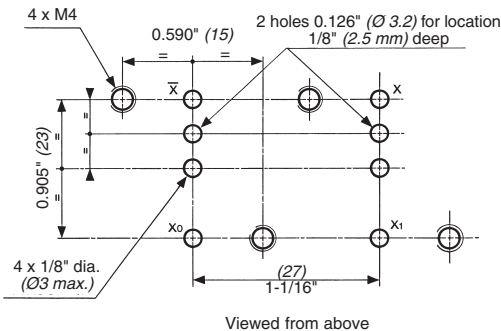


Dimensions

81 523 201 - 81 523 601



Dimensions of logic and memory elements



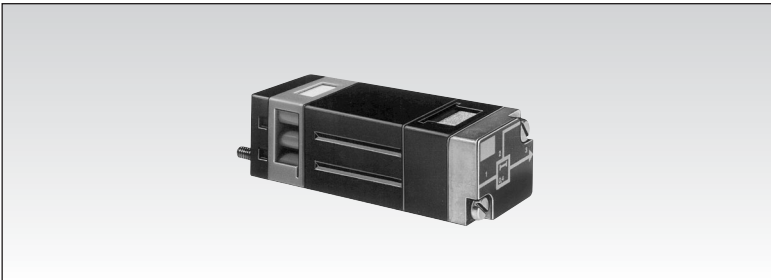
Use (metric) dimensions for critical data.

Other information	To order, specify :
	Standard products 1 Part number Example : Memory element - 81 523 201

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Timers (with fixed timing)



Part numbers

Version

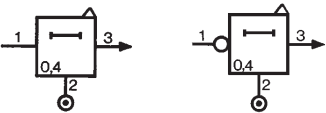
81 503 540

81 506 540

Positive output (N.C.) Negative output (N.O.)

1

Symbol



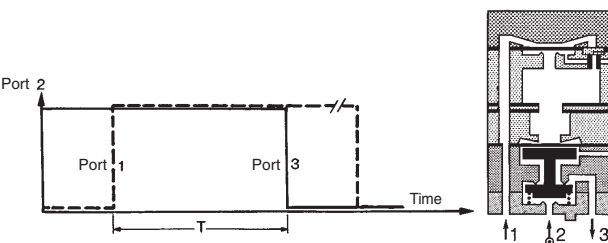
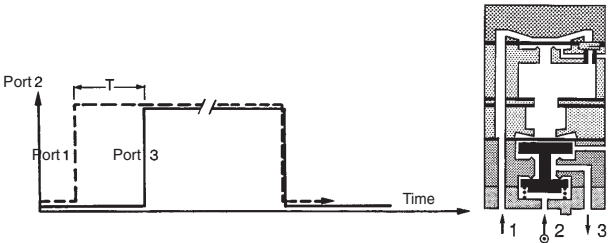
Characteristics

Timing	seconds	0.4	0.4
Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Flow at 90 psi (6 bars)	cfm (Nl/min)	6 (170)	6 (170)
Orifice diameter	inches (mm)	0.106 (2.7)	0.106 (2.7)
Accuracy	%	± 5	± 5
Min. reset time	seconds	<0.1	<0.1
Connection - On sub-base page 5/44 - 5/45			
Operating temperature	°F (°C)	+20 > +120 (-5 > +50)	+20 > +120 (-5 > +50)
Mechanical life	operations	10 million	10 million
Weight	grams	106	106
Relay color		orange	dark gray

Principle of operation

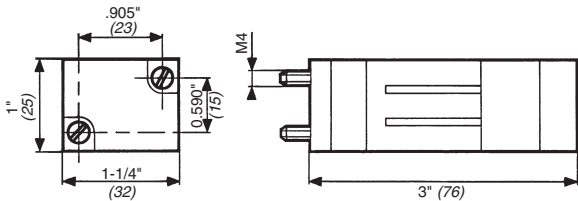
with positive output (N.C.)

with negative output (N.O.)



Dimensions

81 503 540 - 81 506 540



Use (metric) dimensions for critical data.

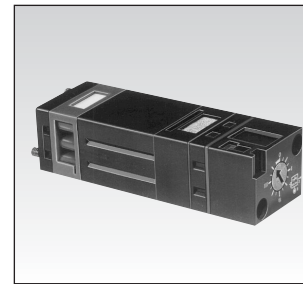
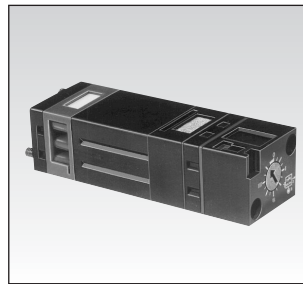
Other information	To order, specify :
	Standard products 1 Part number Example : Timers (with fixed timing) - 81 503 540 Standard products, non stocked

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



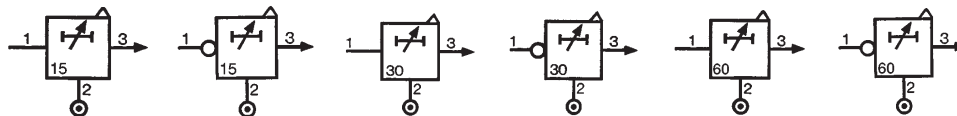
Timers (with adjustable timing)



Part numbers

	81 503 710	81 506 710	81 503 720	81 506 720	81 503 725	81 506 725
Function	positive	negative	positive	negative	positive	negative

Symbol



Characteristics

Timing	s	0.1 • 15	0.1 • 15	0.1 • 30	0.1 • 30	0.1 • 60	0.1 • 60
Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Flow at 6 bars	cfm (Nl/min)	6 (170)	6 (170)	6 (170)	6 (170)	6 (170)	6 (170)
Orifice diameter	inches (mm)	0.406 (27)	0.406 (27)	0.406 (27)	0.406 (27)	0.106 (2.7)	0.106 (2.7)
Accuracy	%	± 5	± 5	± 5	± 5	± 5	± 5
Min. reset time	s	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Connection - On sub-base page 5/44 - 5/45		●	●	●	●	●	●
Operating temperature	°C	-5 +50	-5 +50	-5 +50	-5 +50	-5 +50	-5 +50
Mechanical life	operations	>10 ⁷	>10 ⁷	>10 ⁷	>10 ⁷	>10 ⁷	>10 ⁷
Weight	g	90	90	100	100	120	120

Accessories

Panel mounting adaptor	79 451 698	79 451 698	79 451 903	79 451 903	—	—
Weight	g	53	53	53	—	—

Principle

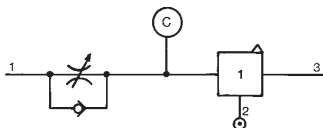
The operation of these pneumatic timers is similar to that of electronic timers (circuit with capacitor/resistor)

Principle of operation

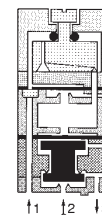
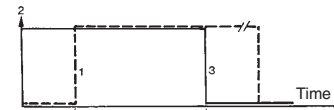
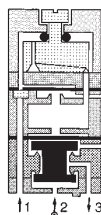
with positive output

with negative output

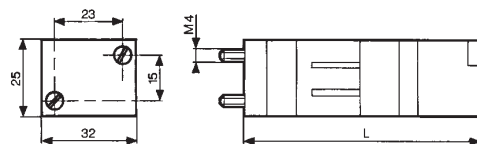
Timing by charging of reservoir



The reservoir fills via the flow restrictor until the switching point of the timer output is reached (positive or negative).
The non-return valve allows the reservoir to be emptied rapidly for the next timing.

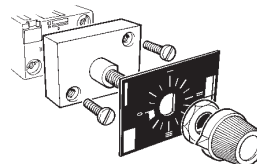
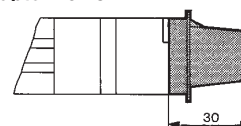
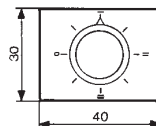


Dimensions



Part numbers	L (mm)
81 503 710 - 81 506 710	78
81 503 720 - 81 506 720	92
81 503 725 - 81 506 725	125

Adaptor 79 451 ...



For panel mounting, a pre-drilled hole Ø 10.5 mm is required

To order, specify :

Standard products

1 Part number

2 Accessory

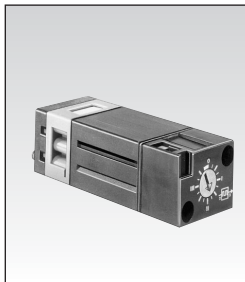
Standard products,
non stocked

Example : Timers (with adjustable timing) - 81 503 710 - Adaptor 79 451 698

Products and specifications subject to change without notice.

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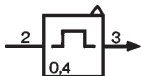
Timers



Part numbers

Single impulse generator	Fixed	81 507 540	—	—
	Adjustable	—	81 507 720	—
Adjustable frequency generator		—	—	81 506 940

Symbol



Characteristics

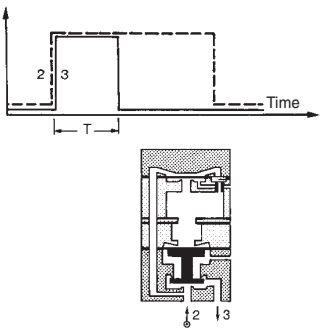
Timing	seconds	0.4	0.1 > 30	—
Frequency	Hz	—	—	0.02 > 8 hz
Operating pressure	psi (bar)	30 > 120 (2 > 8)	30 > 120 (2 > 8)	30 > 120 (2 > 8)
Flow at 6 bars	cfm (Nl/min)	6 (170)	6 (170)	6 (170)
Orifice diameter	inches (mm)	0.106 (2.7)	0.106 (2.7)	0.106 (2.7)
Accuracy	%	± 5	± 5	± 5
Min. reset time	seconds	<0.1	<0.1	<0.1
Connection - On sub-base page 5/44 - 5/45		●	●	●
Operating temperature	°F (°C)	+20 > +120 (-5 > 50)	+20 > +120 (-5 > 50)	+20 > +120 (-5 > 50)
Mechanical life	cycles	10 million	10 million	10 million
Weight	grams	106	180	68

Accessories

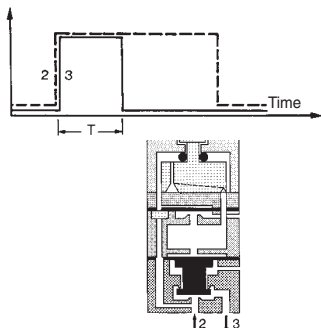
Panel mounting adaptors	—	79 451 904	79 451 905
Weight (g)	—	53	53

Principle of operation

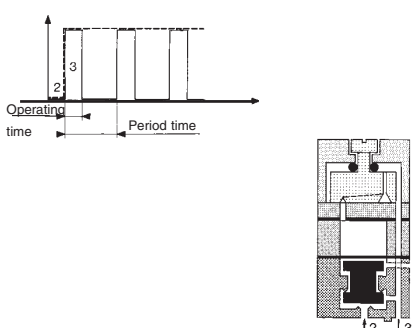
Single impulse generator



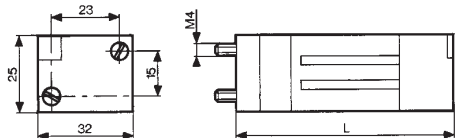
Adjustable impulse generator



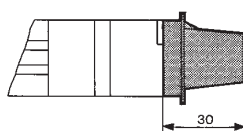
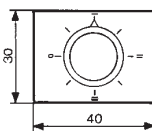
Frequency generator



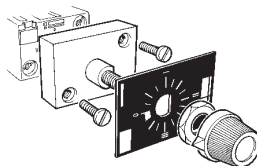
Dimensions



79 451



Part numbers	L (mm)
81 507 540	73
81 507 720	99
81 506 940	72



For panel mounting, a pre-drilled hole Ø 10.5 mm is required

To order, specify :

Standard products

1 Part number

2 Accessory

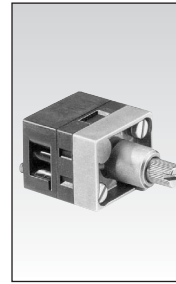
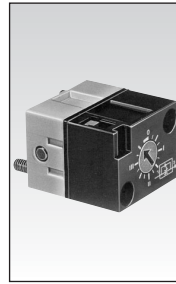
Standard products, non stocked

Example : Timer 81 507 720 - Panel mounting adaptor 79 451 904

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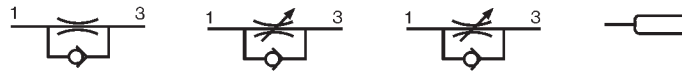
Timer components



Part numbers

One-way in-line fixed flow restrictors	Flow at 4 bars Nl/min	Ø orifice (mm)				
	0.18 → 0.30	0,3	white	81 529 003	—	—
	0.35 → 0.50	0,4	yellow	81 529 004	—	—
	0.58 → 0.77	0,5	red	81 529 005	—	—
	0.80 → 1.06	0,6	green	81 529 006	—	—
	1.10 → 1.39	0,7	blue	81 529 007	—	—
	1.45 → 1.65	0,8	grey	81 529 008	—	—
	2.30 → 2.80	1	black	81 529 010	—	—
	2.08 → 0.12	0,25	white	81 529 025	—	—
One-way adjustable flow restrictor				—	81 525 101	81 526 001
Capacity for timing	10 • 60 s			—	—	79 452 808

Symbol

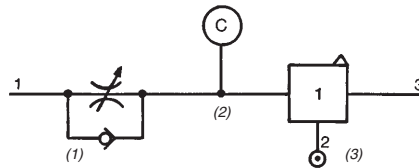


Characteristics

Free flow	cfm	(Nl/min)	Depending on orifice	1.06	(30)	7	(200)	—
Orifice diameter	inches	(mm)	Depending on orifice	0 > 0.02	(0 > 0.5)	0 > 0.07	(0 > 1.7)	—
Operating pressure	psi	(bars)	15 > 120	(1 > 8)	15 > 120	(2 > 8)	30 > 120	(2 > 8)
Timing	seconds		—	—	—	—	—	10 > 60 or 60 > 180
Capacity	Cu. in.	(cm ³)	—	—	—	—	—	1.8 (30) > 5.5 (90)
Connection	Sub-base page 5/44 - 5/45 Push-in connection for semi-rigid tubing (NFE 49100)		—	•	•	•	•	—
Weight	g		Ø 4	—	—	—	—	Ø 4

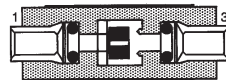
Connections

- For timing circuit
- One-way flow restrictor 81 525 0 - 81 529 0 (1)
 - Reservoir 79 452 808 (2)
 - Relay element 81 503 0 - 81 506 0 (3) page 4/7
- Sub-base page 4/14 - 4/15

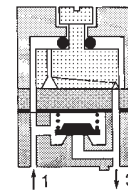


Principle of operation

One-way
with fixed flow



One-way
with adjustable flow



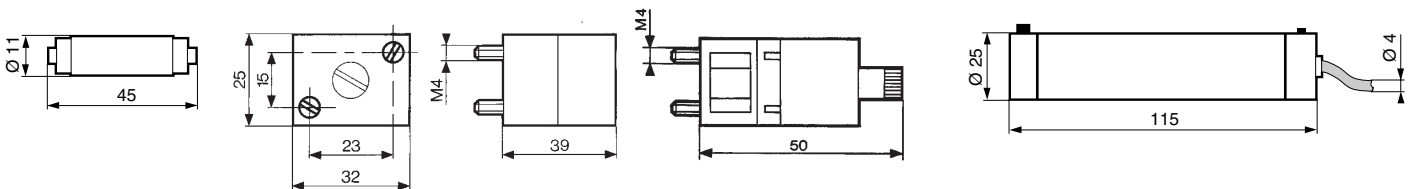
Dimensions

81 529

81 525 101

81 526 001

79 452 808



Other information

One-way flow restrictor with orifice diameter of 1.4 mm on request.

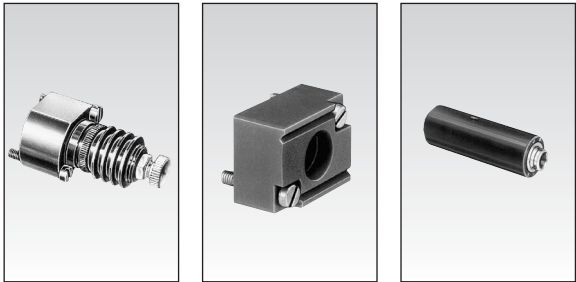
To order, specify :

Standard products

1 Part number
Example : Restrictor - 81 529 003

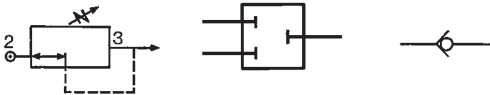
Products and specifications subject to change without notice.

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Part numbers			
Mini-regulator	81 527 001	—	—
Plug element	—	81 520 601	—
In-line non-return	—	—	81 529 901

Symbol

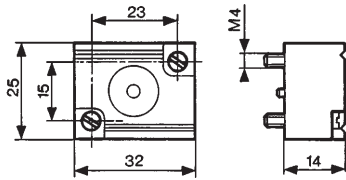
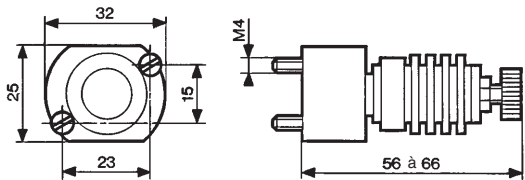


Characteristics					
Operating pressure	psi	(bars)	30 > 120 (2 > 8)	—	30 > 120 (2 > 8)
Flow at 6 bars	cfm	(Nl/min)	7 (200)	—	7 (200)
Adjustable output pressure	psi	(bars)	15 > 120 (1 > 8)	—	—
Connection	sub-base page 5/44 - 5/45 Push-in connection for semi-rigid tubing (NFE 49100)		•	•	•
Weight	g		150	70	70

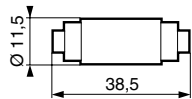
Dimensions

81 530 ...

81 520 601



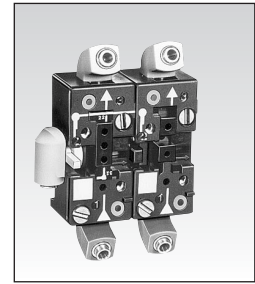
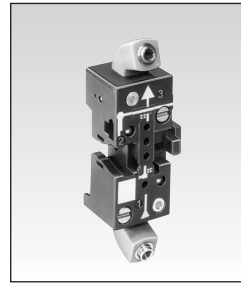
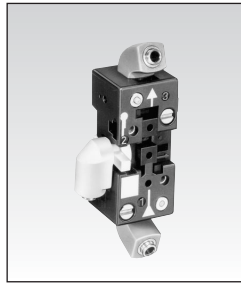
81 529 901



Other information	To order, specify :
81 530 001 / 81 530 101 / 81 530 801 on request.	Standard products 1 Part number Example : Regulator - 81 527 001 Standard products, non stocked

Products and specifications subject to change without notice.

Sub-bases for logic elements and relays



Part numbers

	81 532 104	81 532 102	81 542 002
Two-hand module (page 5/7)	● 1	● 1	—
Pressure decay sensor (page 5/12)	● 1	● 1	—
Pressure switches (page 5/25)	● 1	● 1	—
Manostats - vacuostats (pages 5/26 - 5/27)	● 1	● 1	—
Leak sensor and amplifier relays (pages 5/28 - 5/29)	● 1	● 1	—
Logic elements and timers (pages 5/36 - 5/37 - 5/41)	● 1	● 1	—
Regulator accessories (page 5/42 - 5/43)	● 1	● 1	—
Memory relay (page 5/38)	—	—	● 1

Note : The number indicates the qty of logic footprints on the base

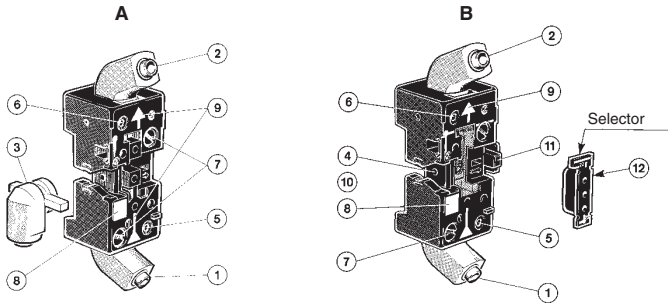
Characteristics

Push-in connection for semi-rigid tubing 5/32" O.D.
(Ø 4 mm) (NFE 49100)

Mounting	rotatable DIN rail 35 mm EN 50022	rotatable DIN rail 35 mm EN 50022	rotatable DIN rail 35 mm EN 50022
Weight	grams 56	52	95

Bases for elements and relays

Front connecting

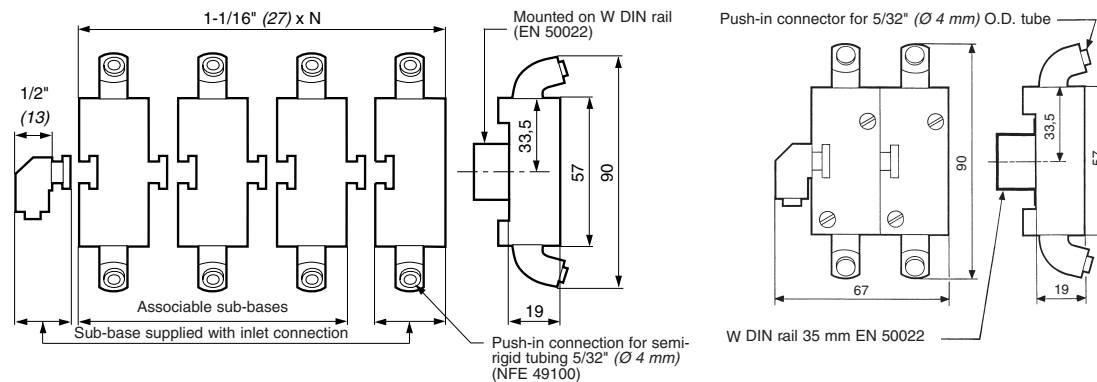


- A - Single sub-base or end base
- B - Associable sub-base
- 1 - Input port (green - port 1)
- 2 - Output port (red - port 3)
- 3 - Input/supply port (yellow - port 2) Ø 5/32" (4 mm)
- 4 - Input port integral to sub-base
- 5 - Input indicator (green)
- 6 - Output indicator (red)
- 7 - 1/4 turn screws
- 8 - Marking tag
- 9 - Arrow indicating flow direction
- 10 - Mounting tongue
- 11 - Mounting groove
- 12 - Selector

Dimensions

81 532 104 - 81 532 102

81 542 002



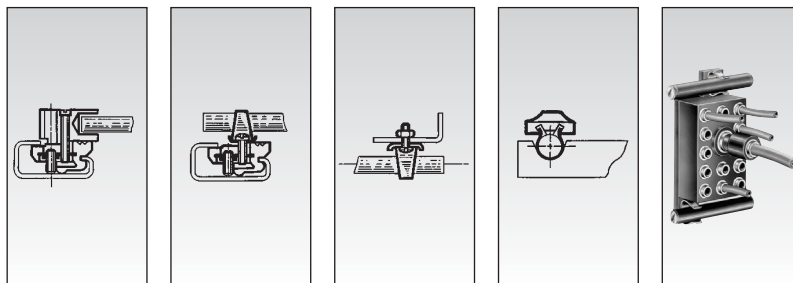
N = number of sub-bases.

Use (metric) dimensions for critical data.

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Mounting accessories



Part numbers

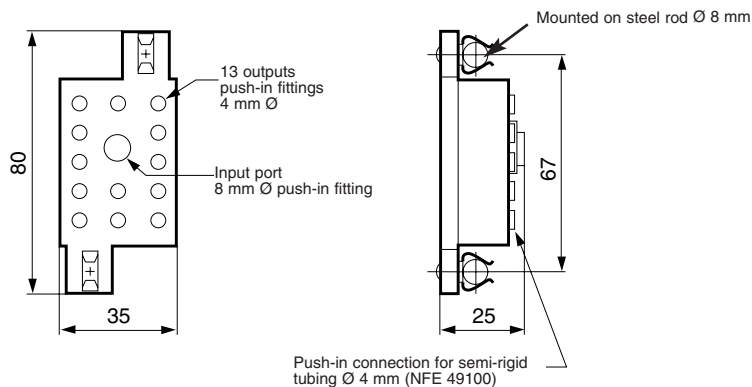
Mounting equipment	81 533 501	81 533 001	79 450 609	79 450 618	
	Hole domino	Clip domino	Bar clips Ø 8	Locking clip	—
Supply manifold 13 outputs	—	—	—	—	81 536 801
Nylon tubing					
Ø D1	Ø D2	R min. of curvature			
Natural	2.7	4	18		
Green	2.7	4	18		
Red	2.7	4	18		
Natural	4	6	35		

Characteristics

Weight (g)	8	4	80	40	80
	For mounting on the end of a zinc-coated mild steel rod Ø 8 mm on an asymmetrical DIN rail	For adjustable mounting on a zinc-coated mild steel rod Ø 8 mm on an asymmetrical DIN rail	Packet of 100 pieces	Packet of 100 pieces	

Dimensions

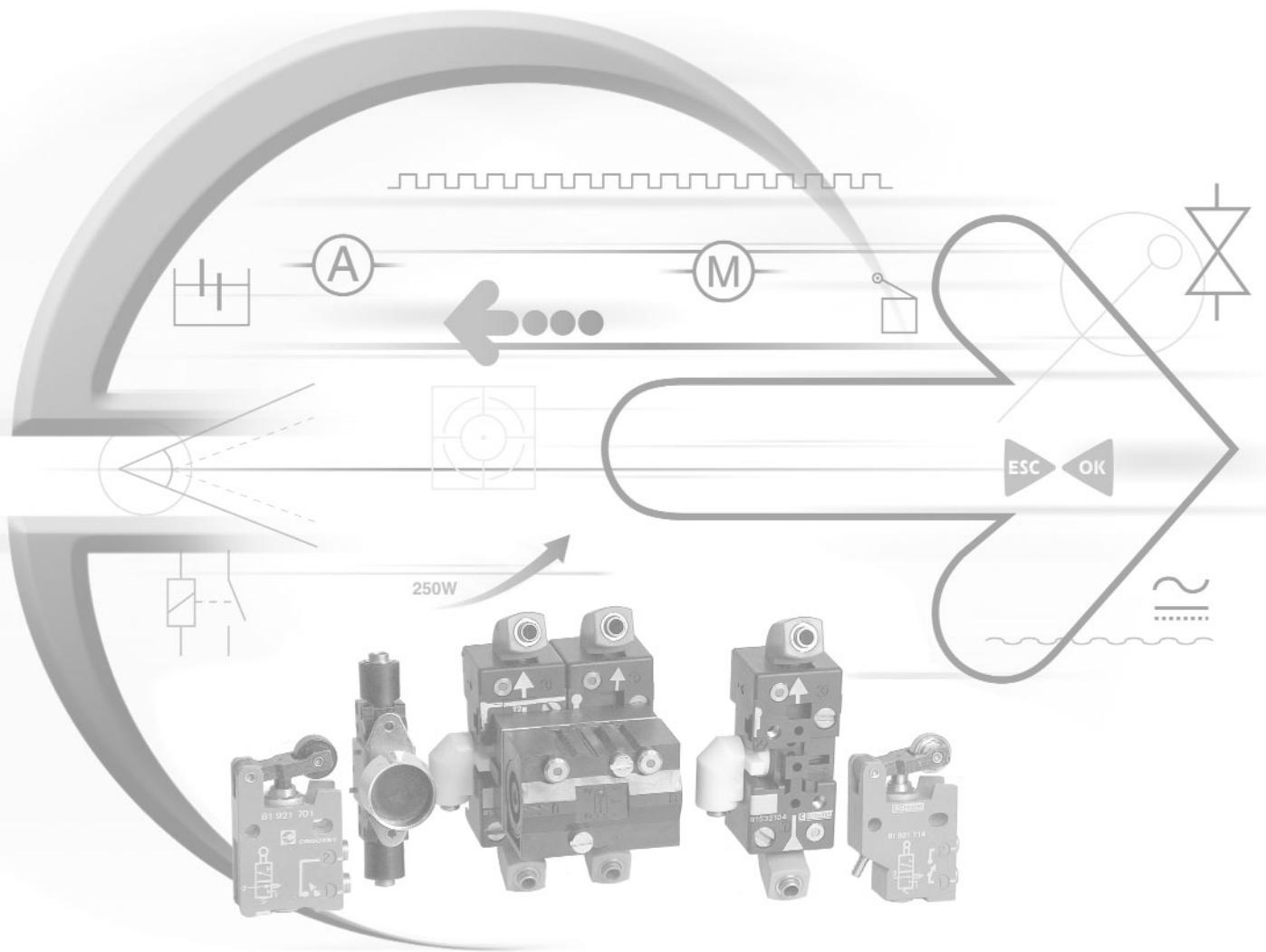
81 536 801



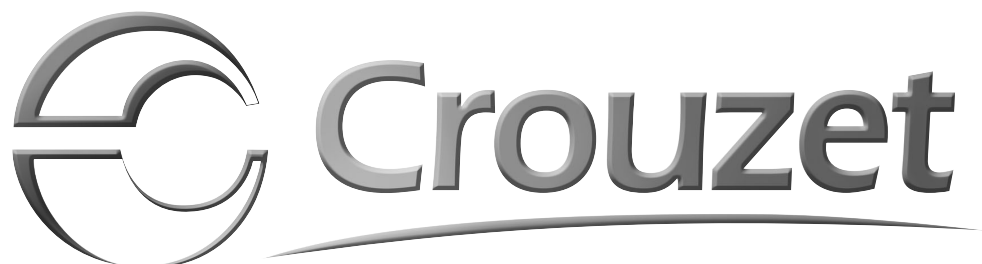
Other information	To order, specify :
Use WEID MULLER plastic labels for marking components part number FW 4734-6.	Standard products 1 Part number Standard products, non stocked Example : Supply manifold (13 outlets) 81 536 801

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



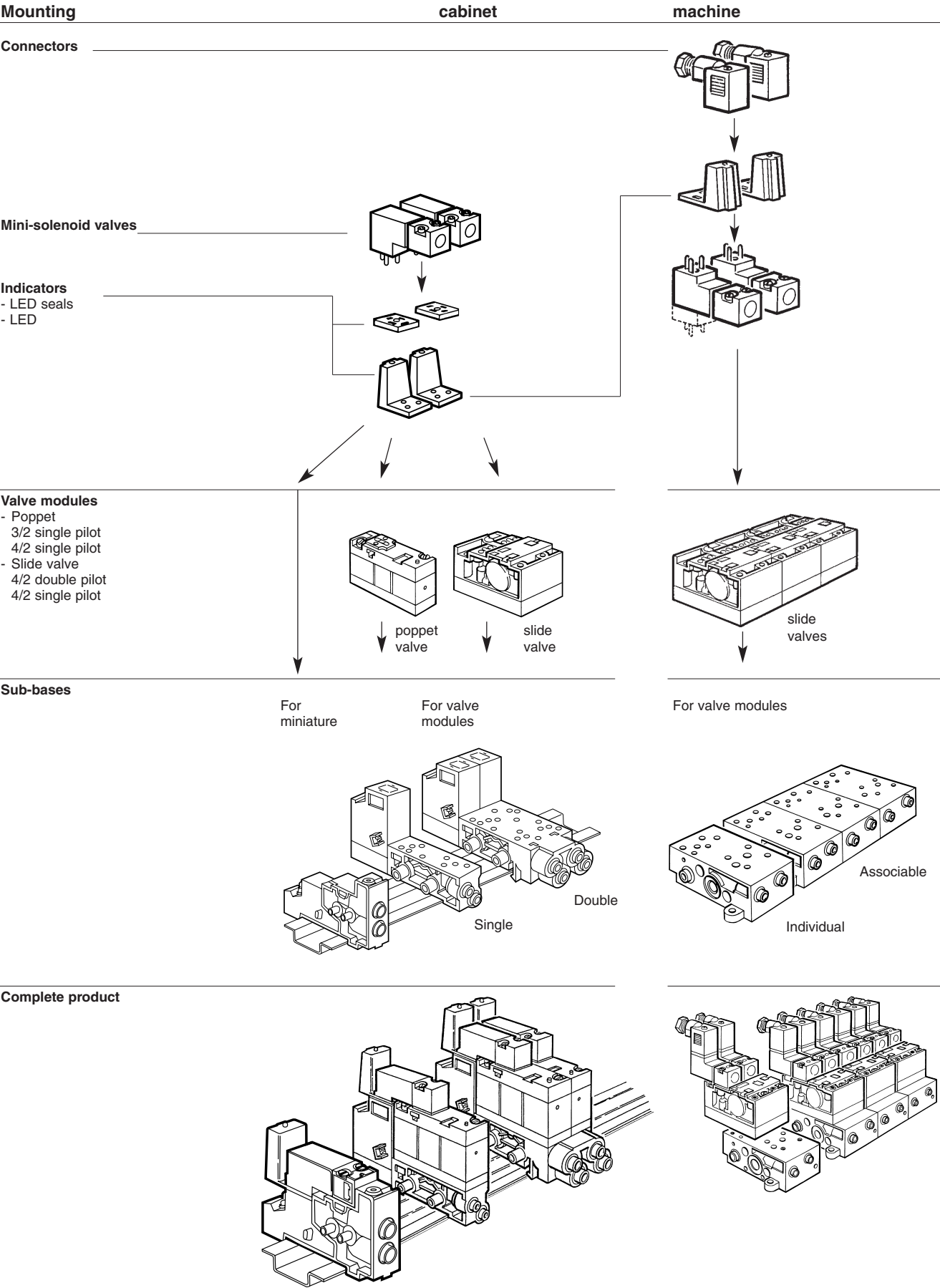
Electro-Pneumatic Miniature Control Valves



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Electro-pneumatic miniature control valves

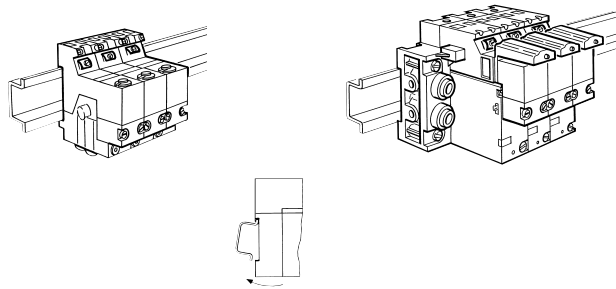


Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

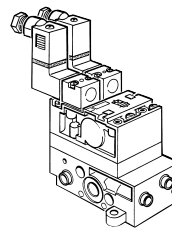
Cabinet mounting (DIN rail)

Simple clip-on installation (no tools required)

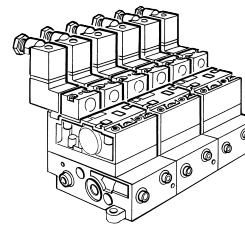


Machine mounting

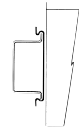
Individual



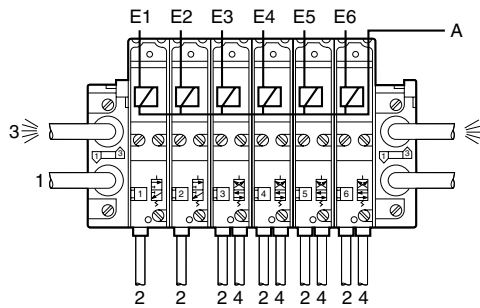
In a bank



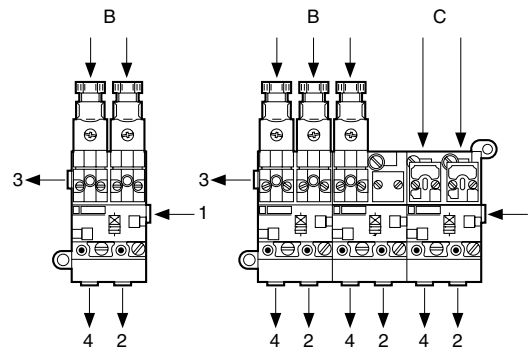
DIN rail adaptation



Connection



- A - Common electrical supply
- B - Electrical pilot
- C - Pneumatic pilot
- 1 - Common supply
- 2 } Pneumatic output
- 4 }
- 3 - Common exhaust



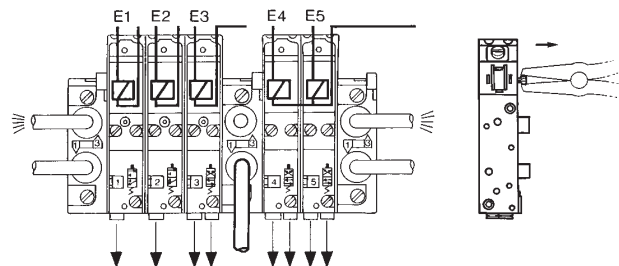
Other options

Pneumatic

- Supply at different pressures

Electrical

- Supply at different voltages
- Independent supply to each module is possible if the integral electrical common pin on the sub-base is removed.

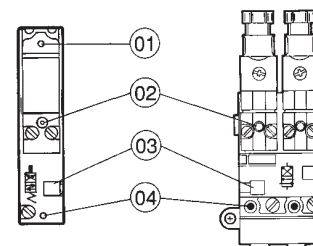


Maintenance

- 01 - LED indicator
- 02 - Manual override to produce input
 - Function symbols
 - Terminal marking
 - Port marking
- 03 - Marking tag
- 04 - Pneumatic output indicator

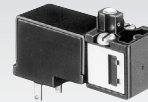
Cabinet mounting

Machine mounting



Miniature solenoid valves for direct current

- Conform to the Low Voltage Directive
- For mounting on sub-base or footprint in accordance with CNOMO recommendation E 06-36-120N



Part numbers (and voltages)

	Consumption	Voltage
Function	1 W	24 V $\equiv$
Version		

81 519 032

3/2 NC
Without
manual
override

81 519 332

3/2 NC
With manual
override by
impulse

81 519 632

3/2 NC
With maintained
manual override

Characteristics

Operating pressure	psi	(Bars)	15 > 120 (1 > 8)	15 > 120 (1 > 8)	15 > 120 (1 > 8)	15 > 120 (1 > 8)
Orifice diameter	inches	(mm)	.03 (0.8)	.03 (0.8)	.03 (0.8)	.03 (0.8)
Flow at 90 psi (6 bars)	cfm	(Nl/min)	1 (30)	1 (30)	1 (30)	1 (30)
Cv (kV)			.02 (0.3)	.02 (0.3)	.02 (0.3)	.02 (0.3)
Switching time milliseconds		(ms)	5 > 15	5 > 15	5 > 15	5 > 15
Mechanical life (cycles)			15 million	15 million	15 million	15 million
Operating temperature	°F	(°C)	+15 > +120 (-10 > +50)	+15 > +120 (-10 > +50)	+15 > +120 (-10 > +50)	+15 > +120 (-10 > +50)
Compressed air or inert gas - oil-free air filtered to 50 µ			●	●	●	●
Duty factor			100 % ED	100 % ED	100 % ED	100 % ED
Insulation class		(IEC 85)	F	F	F	F
Weight	grams		35	35	35	35
Rotatable connector 4 positions in 90° steps			●	●	●	●
Degree of protection with M12 5-pin connector		(IEC 529)	IP 20	IP 20	IP 20	IP 20
with connector 81 516 082		(IEC 529)	IP 65	IP 65	IP 65	IP 65
UL and cUL approval			MH 15085	MH 15085	MH 15085	MH 15085

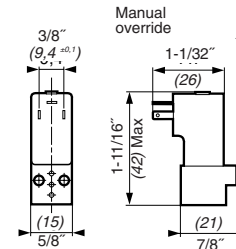
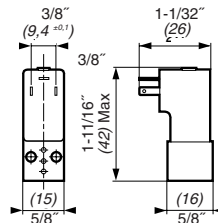
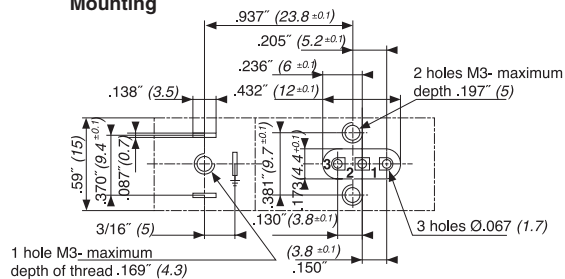
Mounting plan

according to CNOMO E 06.36.120.N

Dimensions 81 519 0

81 519 3 81 519 6

Mounting



- 1 - Supply
- 2 - Output
- 3 - Exhaust

use (metric) dimensions for critical data

Other information	To order, specify :
Other voltages on request. Other orifice diameters (1.2 mm, 1.5 mm) on request.	Standard products 1 Part number Example : Miniature solenoid valves - 81 519 032

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

1

- 



Consumption	Voltage
2.5 VA	24 V ~ 50-60 Hz
2.5 VA	48 V ~ 50-60 Hz*
2.5 VA	110 V ~ 50-60 Hz
2.5 VA	220 V- 230 V ~ 50-60 Hz

81 519 080	81 519 380	81 519 680
—	81 519 381	
—	81 519 378	81 519 678
—	81 519 379	81 519 679
3/2 NC	3/2 NC	3/2 NC
Without manual override	With manual override by impulse	With manual override by latching (1/4 turn)

Operating pressure		psi	(Bars)	15>120 (1>8)	15>120 (1>8)	15>120 (1>8)	15>120 (1>8)
Orifice diameter		inches	(mm)	.03 (0.8)	.03 (0.8)	.03 (0.8)	.03 (0.8)
Flow at 90 psi (6 bars)		cfm	(NI/min)	1 (30)	1 (30)	1 (30)	1 (30)
Cv (kV)				.02 (0.3)	.02 (0.3)	.02 (0.3)	.02 (0.3)
Switching time milliseconds			(ms)	5>15	5>15	5>15	5>15
Mechanical life (cycles)				15 million	15 million	15 million	15 million
Operating temperature		°F	(°C)	+15>+120 (40>+50)	+15>+120 (40>+50)	+15>+120 (40>+50)	+15>+120 (40>+50)
Compressed air or inert gas - oil-free				●	●	●	●
air filtered to 50 μ							
Duty factor				100 % ED	100 % ED	100 % ED	100 % ED
Insulation class			(IEC 85)	F	F	F	F
Weight		grams		35	35	35	35
Rotatable connector 4 positions in 90° steps				●	●	●	●
Degree of protection with sub-base (page 5/52)			(IEC 529)	IP 20	IP 20	IP 20	IP 20
Degree of protection with connector 81 516 082 (page 5/55)			(IEC 529)	IP 65	IP 65	IP 65	IP 65
UL and cUL approval				MH 15085	MH 15085	MH 15085	MH 15085

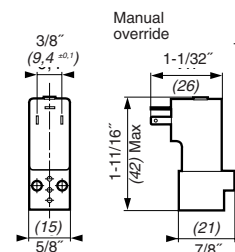
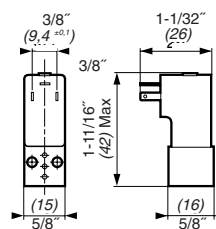
according to CNOMO E 06.36.120.N

Dimensions
81 519 0

81 519 3
81 519 6

Technical drawing of a mechanical part with dimensions and callouts:

- Overall width: $.937" (23.8 \pm 0.1)$
- Overall height: $.59" (15)$
- Top horizontal dimensions: $.205" (5.2 \pm 0.1)$, $.236" (6 \pm 0)$, $.432" (12 \pm 0.1)$
- Left vertical dimensions: $.370" (9.4 \pm 0.1)$, $.087" (0.7)$
- Bottom horizontal dimensions: $.138" (3.5)$, $.130" (3.8 \pm 0.1)$, $.150" (3.8 \pm 0.1)$
- Internal vertical dimensions: $.381" (9.7 \pm 0.1)$, $.172" (4.4 \pm 0.1)$
- Callouts:
 - 1 hole M3- maximum depth of thread $.169" (4.3)$
 - 2 holes M3- maximum depth $.197" (5)$
 - 3 holes $\varnothing .067 (1.7)$

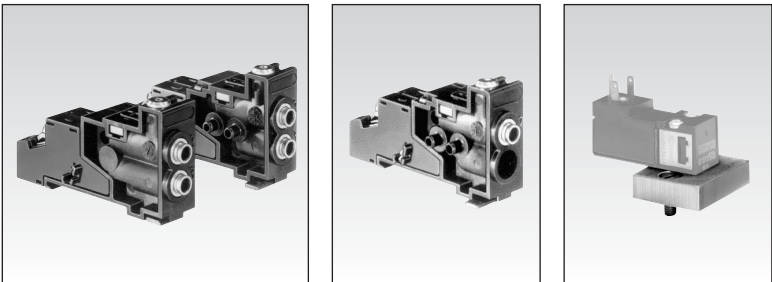


- 1 - Supply
2 - Output
3 - Exhaust

Other information	To order, specify :
Other voltages on request	Standard products 1 Part number Example : Miniature solenoid valves - 81 519 080

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Sub-bases for miniature pilot solenoid valves

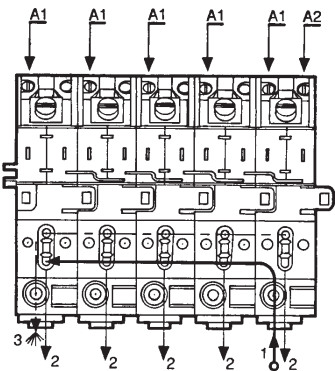


Part numbers			
Pair of end bases	81 514 101	—	—
Intermediate sub-base	—	81 514 161	—
Adaptor sub-base for mounting plan CNOMO 06-05-80 / NFE 49066	—	—	79 453 569

Characteristics			
Pneumatic indicator on output		•	•
Common supply		•	•
Common exhaust		•	•
Wire size	AWG (mm²)	14 (3)	14 (3)
Push-in connection for semi-rigid tubing 5/32" O.D. (Ø 4 mm) (NFE 49100)		•	•
Mounting		DIN rail EN 50022 MH 15085	DIN rail EN 50022 MH 15085 2 screws M4 provided
UL and cUL approval			
Weight	(grams)	65	65 50

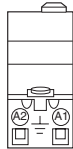
Connection

Pneumatic



- 1 - Supply
- 2 - Output
- 3 - Exhaust

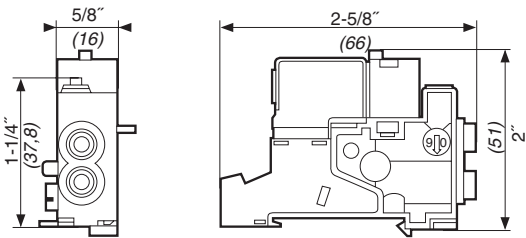
Electrical



- A1 - Pilot signal
- A2 - Common
- ⏏ - Ground

Dimensions with miniature solenoid valve (page 5/4)

81 514 101 - 81 514 161 79 453 569

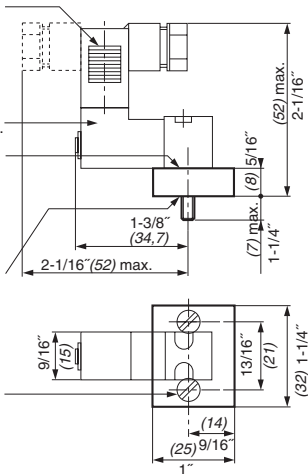


Connector ref 81 516 082 (rotatable in 90° steps) see page 5/55

Miniature solenoid valve 81 519 ... see page 5/50
CNOMO mounting plan E 06-36-120N for mounting miniature solenoid valve 81 519

Mounting on mounting plan CNOMO 06-05-80 NFE 49066

Fixing on CNOMO 06-05-80/ NFE 49-066 mounting plan via 2 cap screws M4 (NFE 25-127)



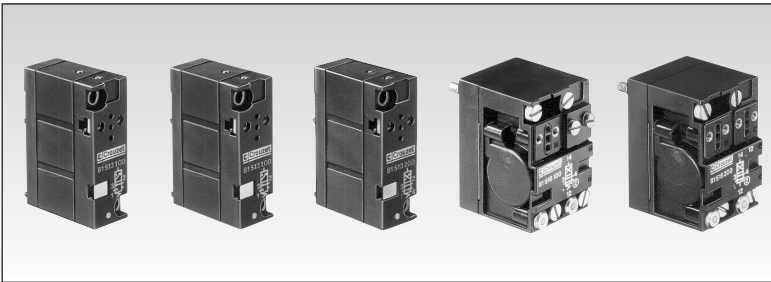
use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products 1 Part number Example : Sub-bases for miniature pilot solenoid valves - 81 514 101

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

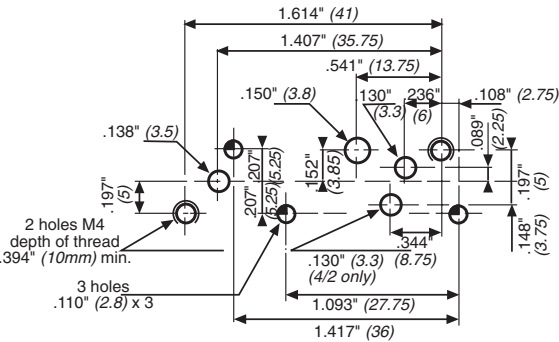
Miniature control valves



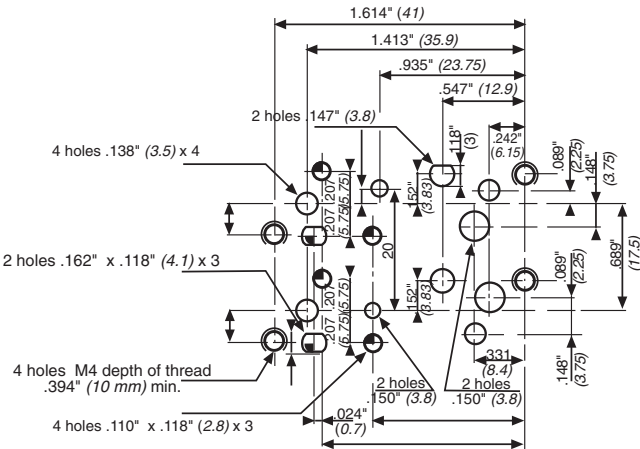
Part numbers	81 513 100	81 513 600	81 513 200	81 516 100	81 516 200
Function	3/2 NC	3/2 NO	4/2	4/2 single pilot spring-return	4/2 double pilot
Symbol					

Characteristics	81 513 100	81 513 600	81 513 200	81 516 100	81 516 200
Width	inches (mm)	11/16" (17.5)	11/16" (17.5)	11/16" (17.5)	1-3/8" (35)
Operating pressure	psi (bars)	45>120 (3>8)	45>120 (3>8)	45>120 (3>8)	50>120 (3.5>8)
Orifice diameter	inches (mm)	1/8" (3)	1/8" (3)	1/8" (3)	5/32" (4)
Flow at 90 psi(6 bars) with 5/32" sub-base (page 5/54)	cfm	7 (200)	7 (200)	7 (200)	10.5 (300)
Operating temperature	°F (°C)	+15>120 (-10>+50)	+15>120 (-10>+50)	+15>120 (-10>+50)	+15>120 (-10>+50)
Cv(kV) with 5/32" sub-base (page 5/54)		.15 (2.2)	.15 (2.2)	.15 (2.2)	.28 (4)
Switching time of the relay only (Milliseconds)		5	5	5	10
Mechanical life (cycles)		15million	15million	15million	10million
Weight (grams)		38	38	38	106

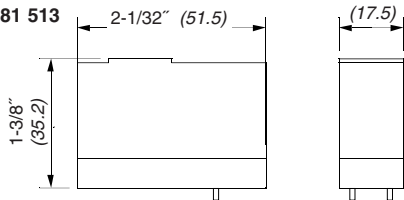
Mounting plan for poppet minivalve
81 513 100 - 81 513 200 - 81 513 600



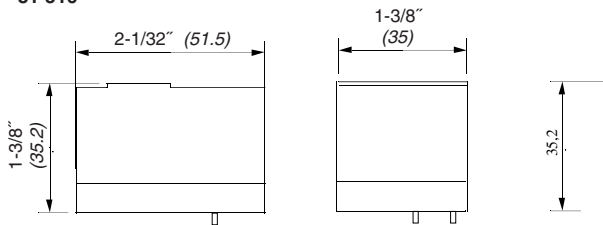
Mounting plan for slide mini valve
81 516 100 - 81 516 200



Dimensions



81 516



use (metric) dimensions for critical data

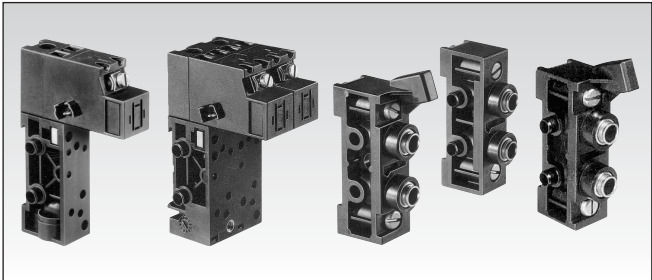
Other information	To order, specify :
On request : Miniature power valve supplied mounted on a sub-base and equipped with its own control solenoid valve	Standard products 1 Part number Example : Miniature control valve - 81 513 100 Standard products, non stocked

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Sub-bases and end bases for miniature control valves



Part numbers							
Mounting				Cabinet	Cabinet	Cabinet	Cabinet
Version				17.5 mm	35 mm	—	—
Push-in connection for semi-rigid tubing (NFE 49100)	Sub-bases	Ø 4 mm		81 513 060	81 517 101	—	—
		Ø 6 mm		81 513 065	81 517 201	—	—
	End bases (pair)	Ø 6 mm		—	—	81 513 011	—
	Intermediate supply module	Ø 6 mm		—	—	—	81 513 001

Characteristics							
Torque capacity	mm²		3	3	—	—	—
UL and cUL approval			MM15085	MM15085	—	—	—
Mounting			DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
			EN 50022	EN 50022	EN 50022	EN 50022	EN 50022
Weight	g		55	110	86	44	44

Connections

Pneumatic

81 513 011 - 81 513 001

2 - Pneumatic output 4/2 (NO)
4 - Pneumatic output 3/2 or 4/2 (NC)

2 Output at rest (NO)
3 Output at rest *
4 Output at rest *
5 Output operating (NC)

02 2 Supply ports
03 2 Exhaust ports
Integral push-in connections Ø 6 mm

Note :
Each sub-base can accept
- sub-base 81 513 060-065 : 1 relay 3/2 or 4/2, width 17.5 mm
- sub-base 81 517 101-201 : 1 bistable relay 4/2 (width 35 mm) or 2 relays 3/2 or 4/2 (width 17.5 mm)

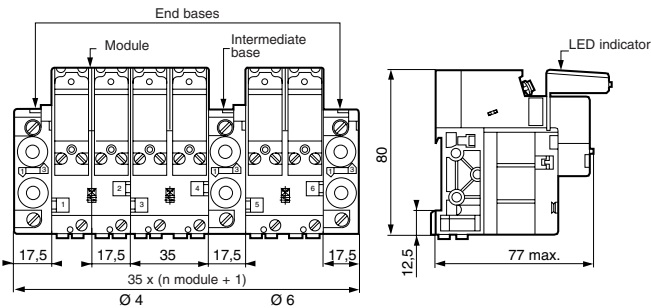
Electrical

Degree of protection : IP20 when assembled.

A1 - Pilot signal
A2 - Common
Earth

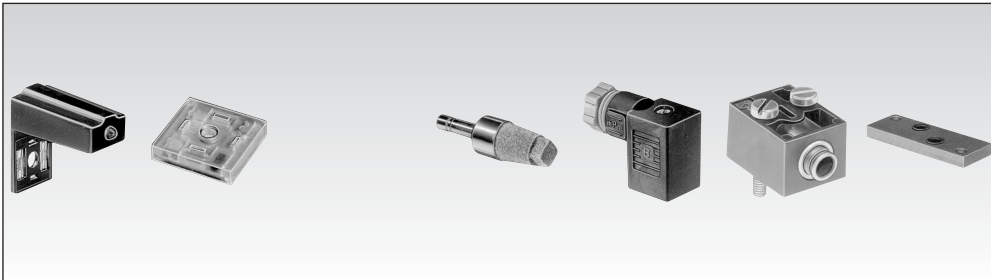
A1 - Operating control signal (14)
A2 - Common
A1 - Rest control signal (12)
A2 - Common
Earth

Dimensions with miniature control valves (page 5/53) + miniature solenoid valves (page 5/50) + indicators (page 5/55)



Other information	To order, specify :
	Standard products 1 Part number Example : Miniature control valve - 81 513 060

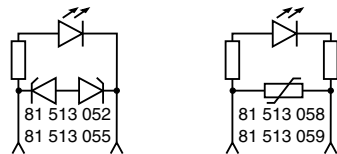
Accessories



Part numbers

Visual indicators*	24 V - 50-60 Hz $\equiv$	81 513 052	—	—	—	—	—	—
	48 V - 50-60 Hz $\equiv$	81 513 055	—	—	—	—	—	—
	110 V - 50-60 Hz $\equiv$	81 513 058	—	—	—	—	—	—
	230 V - 50-60 Hz (-10% +6 %)	81 513 059	—	—	—	—	—	—
Version	With anti-surge and indication	—	—	—	—	—	—	—
LED seal	12 to 24 V - DC - AC	—	81 513 064	—	—	—	—	—
Exhaust silencer	Plug-in Ø 6	—	—	—	81 537 001	—	—	—
	Plug-in Ø 8	—	—	—	81 537 201	—	—	—
Connector for solenoid valve		—	—	—	—	81 516 082	—	—
Pneumatic pilots	Without manual override	—	—	—	—	—	81 516 081	—
	With manual override by impulse	—	—	—	—	—	—	—
Push-in connection for semi-rigid tubing Ø 4 mm (NFE 49100)		—	—	—	—	—	—	—
Blanking plate		—	—	—	—	—	—	81 516 085

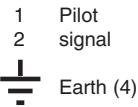
Symbol



Characteristics

Consumption	W	—	0.24	—	—	—	—	—
Temperature	°C	—	- 10 to + 50	—	—	—	—	—
Connection	mm	—	—	—	—	—	Instantané Ø 4 ext.	—
Mounted between the pilot solenoid valve and the body of the module		•	•	—	—	—	—	—
Supplied in multiples of 5		•	—	—	—	—	—	—
Supplied in multiples of 10		—	•	—	—	•	•	•
Packet of 10 pieces		—	—	—	—	—	—	•
Weight	g	6	2	30	10	5	3	—

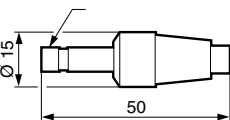
Connection



Dimensions

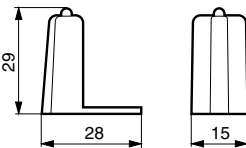
81 537 001 - 81 537 201

Mounted by plugging into push-in connector for semi-rigid tubing (NFE 49100)

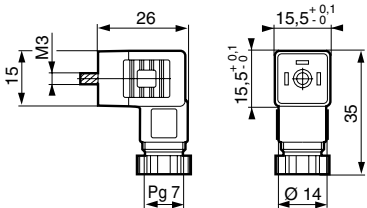


81 513 052 - 81 513 055

81 513 058 - 81 513 059



81 516 082



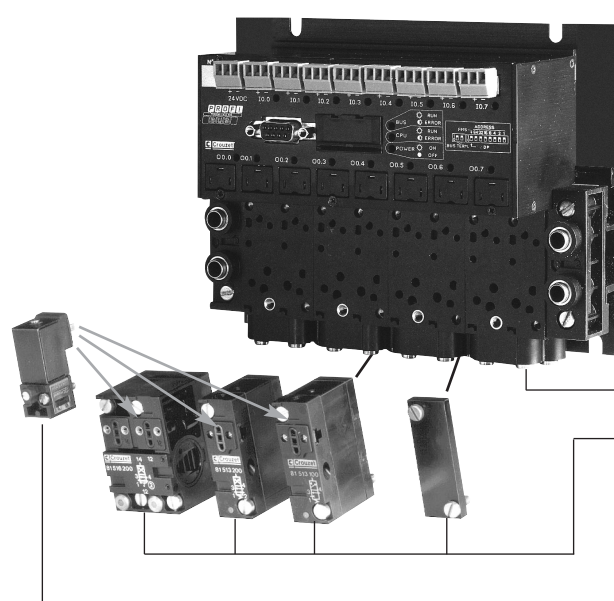
Other information	To order, specify :
* Other voltages available on request	Standard products 1 Part number Example : LED seal - 81 513 064

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



To order, specify :



Reference for the station configuration

- 81 555 2 station with 8 inputs / 8 outputs
- 81 555 3 station with 16 inputs / 16 outputs

Communications protocol

- Profibus
- C-Bus
- Device Net

Dimension of connectors for output ports

- push-in connectors for Ø 4 mm
- push-in connectors for Ø 6 mm

Reference for valve modules and corresponding quantity

- 81 513 100 valve module 3/2 NC (1 mounting position)
- 81 513 200 valve module 4/2 monostable (1 mounting position)
- 81 516 100 valve module 4/2 monostable (2 mounting positions)
- 81 516 200 valve module 4/2 bistable (2 mounting positions)
- 81 516 085 blanking plate (1 mounting position)

Reference for pilot solenoid valves and corresponding quantity

- 81 519 032 without manual override
- 81 519 332 with pulsed manual override
- 81 519 632 with maintained manual override

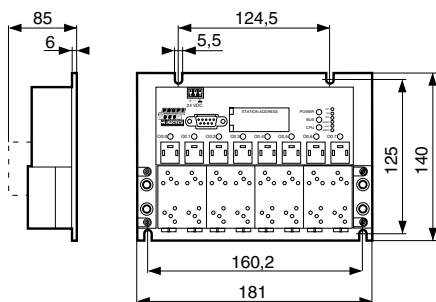
Example of an order :

1 station with 8 inputs / 8 outputs 81 555 2, Profibus DP protocol, push-in connectors Ø 6 mm, 7 valve modules 81 513 100, 1 blanking plate 81 516 085, 7 pilot solenoid valves without manual override 81 519 032.

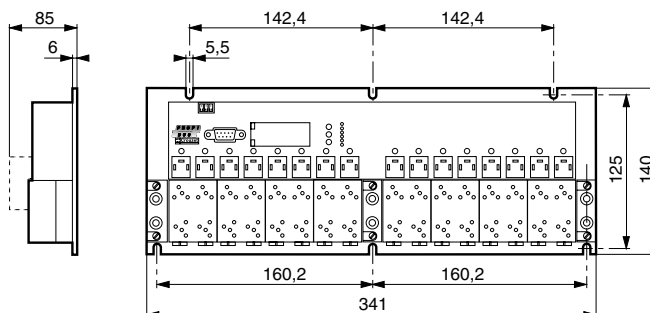
Note : Disks containing the configuration files and programming manuals should both be ordered separately.

Dimensions

81 555 2--



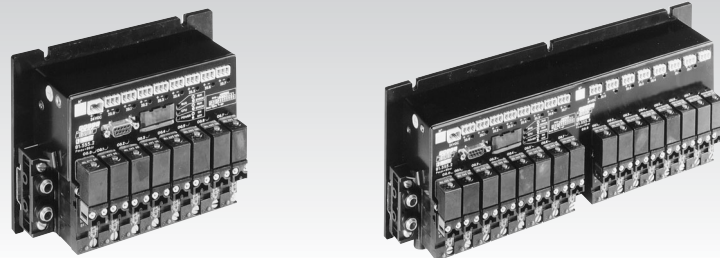
81 555 3--



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Miniature power valve stations



Part numbers

	81 555 2--	81 555 3--
Number of inputs (electrical)	8	16
Number of outputs (pneumatic)	8	16

Electrical characteristics

Power supply	VDC	24 -10 % +15%	24 -10 % +15%
Ripple max.	Un	5 %	5 %
Consumption per pilot solenoid valve	mA	40	40
Max. sensor consumption	mA	500	500
Dielectric strength acc. to IEC1131-2	KV DC	0,8	0,8
Electromagnetic compatibility IEC 801-2-3-4 and IEC 255-4		Level 3	Level 3
Power supply connection		Phoenix 3-pin plug connector 3.81 mm pitch	Phoenix 3-pin plug connector 3.81 mm pitch
Input connections (electrical)		Phoenix 3-pin plug connector 3.81 mm pitch	Phoenix 3-pin plug connector 3.81 mm pitch
Type of inputs		2 or 3-wire sensors for Un = 24 VDC	2 or 3-wire sensors for Un = 24 VDC
Operating voltage for each input	VDC	Level 1 : 11 to 30 Level 0 : 0 to 5	Level 1 : 11 to 30 Level 0 : 0 to 5
Current consumption for each input	mA	In : 12 ± 5	In : 12 ± 5
Insulation resistance for each input	DC	800	800

Pneumatic characteristics

Number of valve positions at 17.5 mm intervals		8	16
Connection of common supply of pressurised medium		2 push-in connectors for 6 mm o.d. tubing	3 push-in connectors for 6 mm o.d. tubing
Connection of common exhaust		2 push-in connectors for 6 mm o.d. tubing	3 push-in connectors for 6 mm o.d. tubing
Output connections		2 push-in connectors for 4 or 6 o.d. tubing per mounting position	2 push-in connectors for 4 or 6 o.d. tubing per mounting position
Working pressure	bars	3.5 to 8 bars for 81 516 power valves 3 to 8 bars for 81 513 power valves	3.5 to 8 bars for 81 516 power valves 3 to 8 bars for 81 513 power valves
Working medium		Compressed air or inert gas oil-free air filtered to 50 µ	Compressed air or inert gas oil-free air filtered to 50 µ

General characteristics

Class of protection IEC 529		IP 20	IP 20
Operating temperature IEC 68-2-14	°C	-5 to +50	-5 to +50
Storage temperature IEC 68-2-1-2	°C	-15 to +50	-15 to +50
Vibration resistance IEC 68-2-6	HZ	10 to 57 / 0.5 g / amplitude 0.0375 mm	10 to 57 / 0.5 g / amplitude 0.0375 mm
Weight (not fitted with valve modules)	g	750	1 406

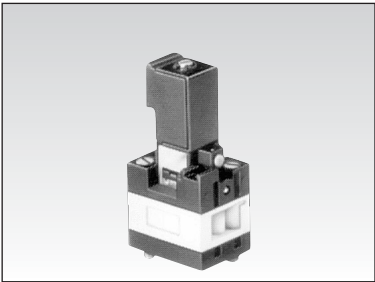
PROTOCOL	PROFIBUS					CBUS				DEVICE NET		
Disk containing configuration files	79 453 656					-				79 453 660		
Programming manual	79 453 630					79 453 630				79 453 633		
	79 453 631					79 453 631				79 453 634		
	79 453 632					79 453 632				79 453 635		
Other versions	Profibus DP Profibus FMS (DIN 19245) Sinec L2 TF (Siemens)					Modbus						
Type of link	RS 485					RS 485				as standard Device Net		
Connection	SUB D 9 connector					SUB D 9 connector				Phoenix plug connector 5.08 mm pitch / 5-pin		
Speed selection	Automatic recognition					with 2 switches				with 2 switches		
Speeds (K bits / sec)	9,6	19,2	93,75	187,5	500	2,4	4,8	9,6	19,2	125	250	500
Transmission distance (m)	1200	1200	1200	1000	200	1200	1200	1200	1200	500	200	100
Setting station addresses	with 7 switches					with 5 switches				with 6 switches		
Max. number of stations	127					31				54		

Other informations	To order, specify :
Other communication protocol : please consult us.	Standard products 1 Part number Example : See page 5/56.
Other configurations : please consult us.	

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Solenoid valves



Part numbers and voltages

Function	3/2 NC		3/2 NO
Mounting	On sub-base (p.5/44)		On sub-base (p.5/44)
Solenoid valves	24 Vdc	(+10% -15%) 81 519 732	81 519 832
with impulse	24 Vac - 50/60 Hz	(+10% -15%) 81 519 774	—
manual	48Vac - 50/60 Hz	(+10% -15%) 81 519 775	—
override	110 Vac - 50/60 Hz	(+10% -15%) 81 519 776	—
	220 Vac - 50/60 Hz	(+10% -15%) 81 519 777	—

1

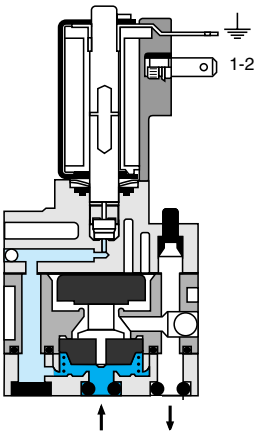
Symbol



Characteristics

Operating pressure	psi (bar)	30>120 (2 > 8)	30>120 (2 > 8)
Orifice diameter	inches (mm)	0.106 (2.7)	0.106 (2.7)
Flow at 90 psi (6 bars)	cfm (Nl/min)	6 (170)	6 (170)
Rotatable coil 4 positions in 90° steps		●	●
Degree of protection (with connector 81 516 082 not supplied) (see page 5/11)	IEC 529	IP 65	IP 65
Mechanical life	cycles	15 million	15 million
Consumption	W	1	1
	VA	2.5	2.5
Operating temperature	°F (°C)	(-5 > +50)	(-5 > +50)
Weight	(grams)	70	70
UL and cUL approval		MH15085	MH15085

Principle of operation



Connections

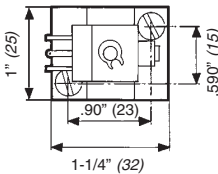
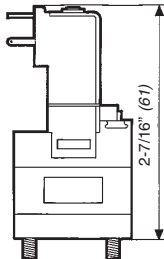
- Pneumatic { 1 - Supply
2 - Output
- Electrical { 1 - 2 - Pilot signal
Ground

Electrical connection by connector
81 516 062 (see page 5/55)

Dimensions

81 519

On separate sub-base



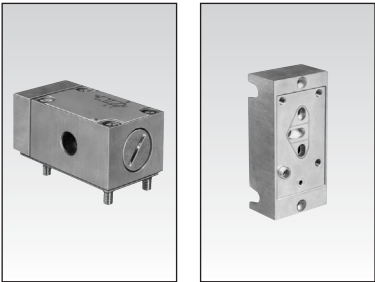
use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products 1 Part number Example : Solenoid valve 81 519 777
	Standard products, non stocked 1 Part number Example : Solenoid valve 81 519 775

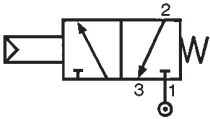
Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

3/2 control valve and sub-base

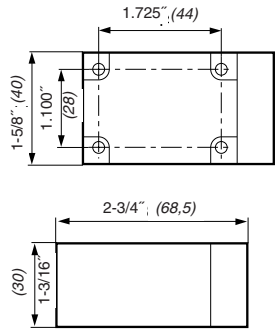


Part numbers			1
3/2 control valve with pneumatic pilot	81 213 101	—	
Sub-base - push-in connection for semi-rigid tubing 5/16" O.D. (Ø 8 mm) (NFE 49100)	—	81 544 101	
Symbol			

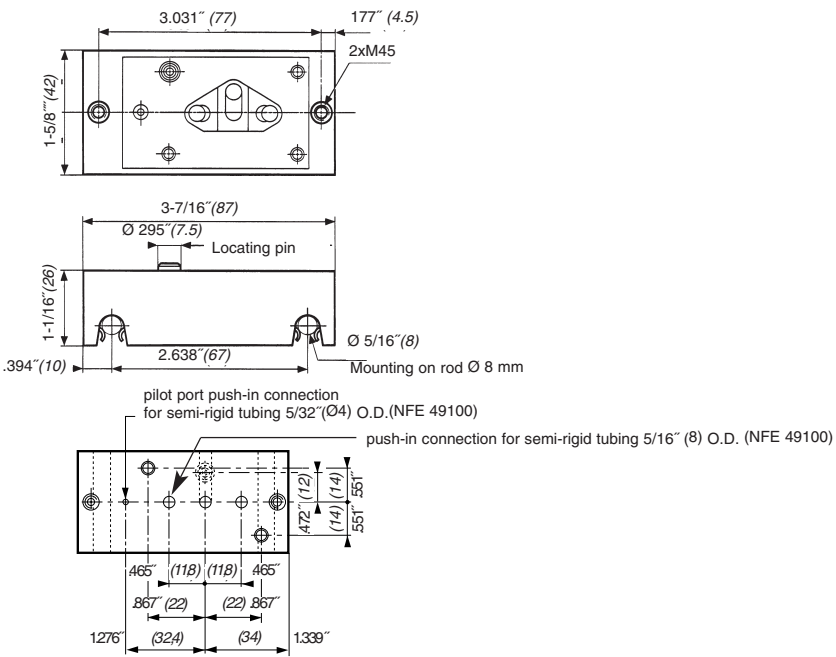


Characteristics				
Pilot pressure	psi (bar)	30>120 (2 > 8)	—	
Operating pressure	psi (bar)	30>150 (2 > 12)	—	
Orifice diameter	inches (mm)	1/4" (6)	—	
Flow at 90 psi (6 bars) upstream	cfm (NL/min)	26 (750)	—	
Life at 60 psi (4 bars)	cycles	10 million	—	
Weight	grams	350	220	
Dimensions				

81 213 101



81 544 101



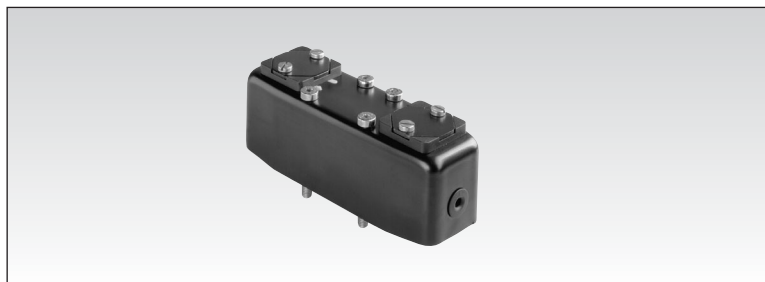
use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products 1 Part number Example : 3/2 control valve and accessories - 81 213 101

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

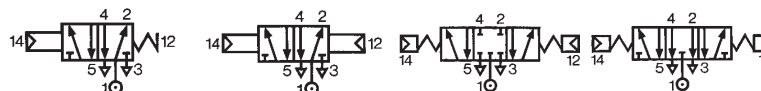
Control valves, ISO 5599-size 1 footprint



Part numbers

	89 541 007	89 541 037	89 541 047	89 541 067
Pneumatic pilot	Air pilot spring return	Double air pilot	Double air pilot closed center	Double air pilot open center
Function	5/2	5/2	5/3	5/3

Symbol

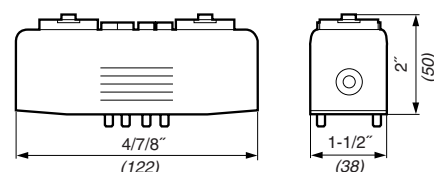


Characteristics

Operating pressure with internal pilot supply	psi (bar)	45>150(+3>+10)	45>150(+3>+10)	45>150(+3>+10)	45>150(+3>+10)
Operating pressure with external pilot supply	psi (bar)	vacuum to 180(-0.950>12)	vacuum to 180(-0.950>12)	vacuum to 180(-0.950>12)	vacuum to 180(-0.950>12)
Pilot pressure	psi (bar)	45>150(3>10)	45>150(3>10)	45>150(3>10)	45>150(3>10)
Operating temperature	°F (°C)	+15>+150(-10>+70)	+15>+150(-10>+70)	+15>+150(-10>+70)	+15>+150(-10>+70)
Flow at 90 psi (6 bars) (ANR)	cfm (NL/min)	50 (1400)	50 (1400)	50 (1400)	50 (1400)
Life (cycles)		30 million	30 million	30 million	30 million
Mounting plan : ISO standard 5599-01					
Weight	(grams)	415	415	415	415

Dimensions

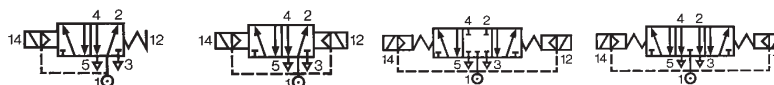
89 541-



Products available to order (please consult us)

Electro-pneumatic control	Air pilot	Double air pilot	Double air pilot	Double air pilot
Function	spring return	5/2	closed center 5/3	open center 5/3

Symbol



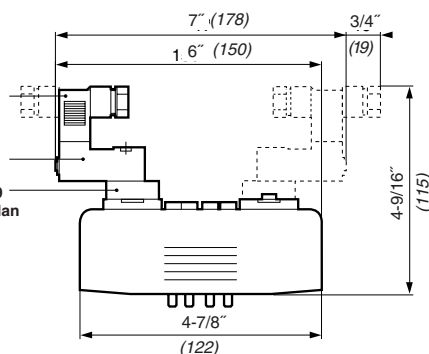
Dimensions

On request

Connector Ref : 81 516 082
see page 5/55

Miniature solenoid valve
Ref : 81 519 ...
see page 5/50

Adaptor sub-base Ref 79 453 569
for CNOMO 06.05.80 mounting plan



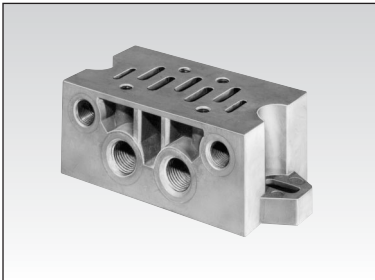
use (metric) dimensions for critical data

Other information	To order, specify :
For characteristics of pilot solenoid valve, see page 5/50	☐ Standard products 1 Part number Example : Pneumatic control valve - 81 541 007 ☐ Made to order products, please consult us

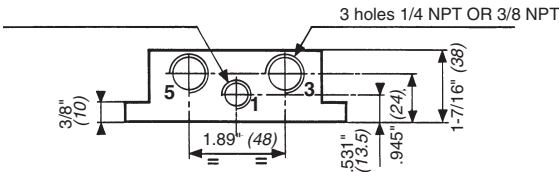
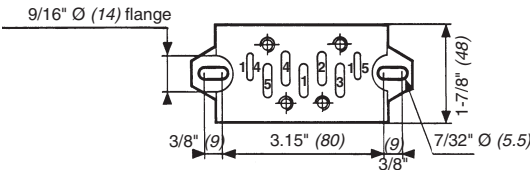
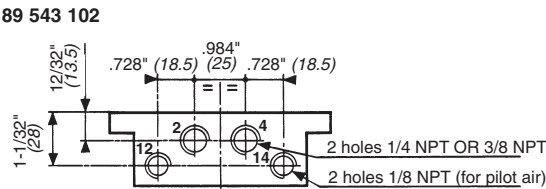
Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Sub-bases for ISO size 1 control valves 5/2 and 5/3



Part numbers				1
Single sub-base (with clips)				
Single sub-base with side connections				
Characteristics				
Connection	push-in for semi-rigid tubing			
	(NFE49100)			
Weight	tapped hole			
	(grams)			
		Ø 6 mm	Ø 8 mm	
		950	950	
Dimensions				



- Port
- 1= supply
 - 2= output port at rest
 - 3= exhaust port 2
 - 4= output port on actuation
 - 5= exhaust port of 4
 - 12= rest pilot
 - 14= actuation pilot

use (metric) dimensions for critical data

Other information	To order, specify :
	Standard products 1 Part number Example : Sub-bases for ISO control valves - 81 543 002
	Standard products non-stocked

Products and specifications subject to change without notice.

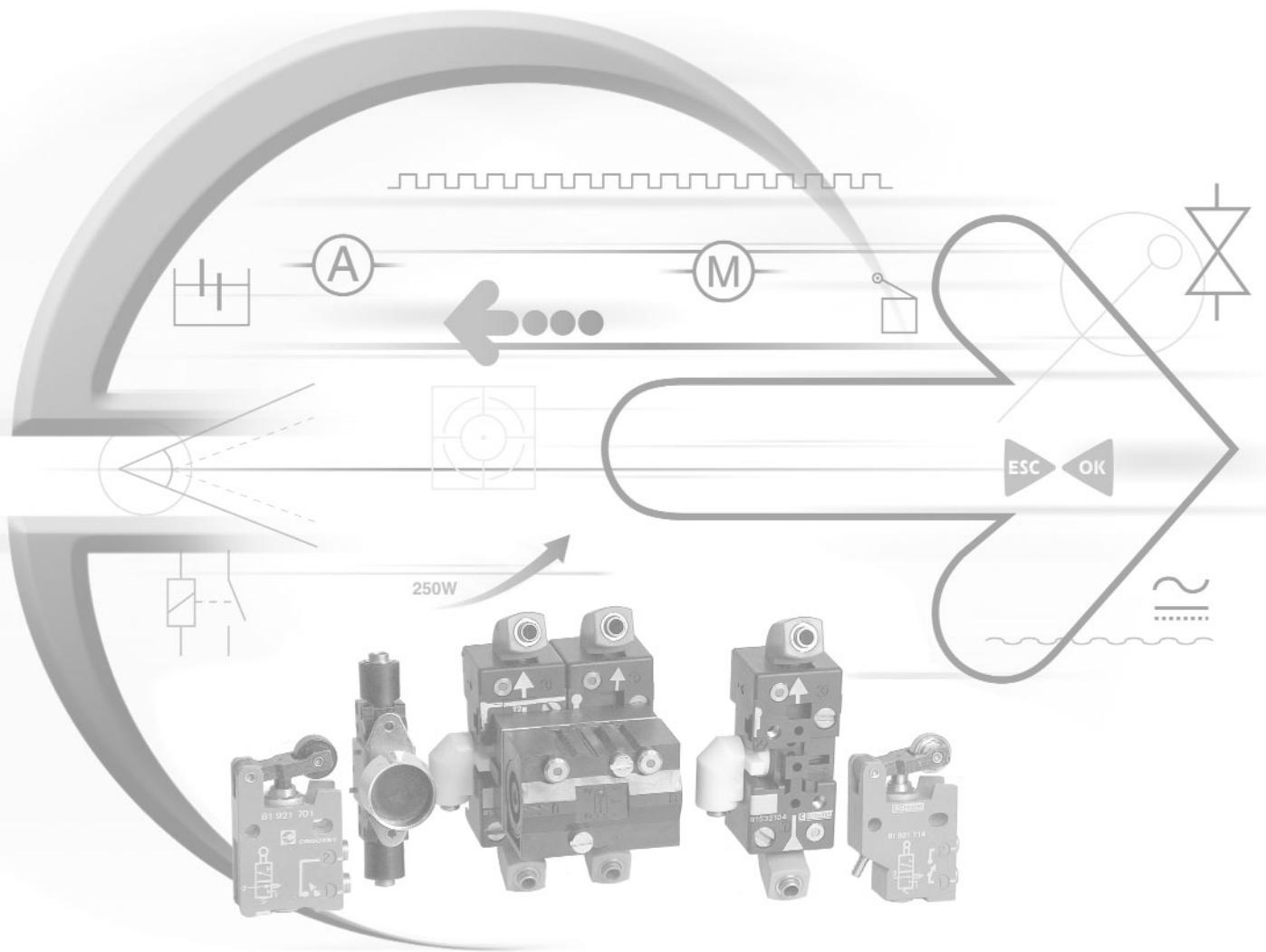
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com





Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Intrinsically Safe Miniature Solenoid Valves



Products and specifications subject to change without notice.

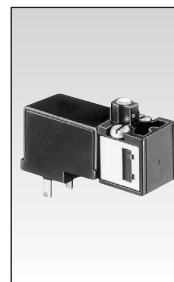
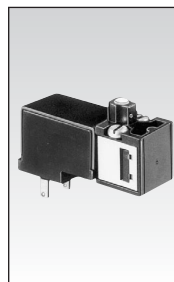
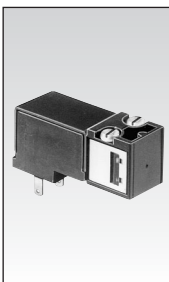
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Intrinsically safe miniature solenoid valves EEx ia II C T6

LCIE approval
no. 93 C 6014X

For mounting on sub-base or footprint in
accordance with CNOMO recommendation
E 06-36-120N



Part numbers (and voltages)

	Voltage	max. power consumption			
U nominal					
Supply voltage (barrier output or interface) between 5 and 18 Vdc inc.	12 Vdc	0.70 W			
U nominal					
Supply voltage (barrier output or interface) between 12 and 28 Vdc inc.	24 Vdc	0.70 W	81 519 035	81 519 335	81 519 635
Function			3/2 NC	3/2 NC	3/2 NC
Versions	Without manual override		●	—	—
	With manual override		—	impulse	latched (1/4 turn)

Symbols



Characteristics

Permitted fluids	filtered 10 µ, lubricated (ASTM2) or not	air or inert gases	air or inert gases	air or inert gases
Operating pressure	bars	1 → 7	1 → 7	1 → 7
Orifice diameter	mm	0.5	0.5	0.5
Flow at 6 bars	NL/min	12	12	12
Flow coefficient	KV	0.12	0.12	0.12
Temperature	operating °C	- 10 + 50	- 10 + 50	- 10 + 50
	fluid °C	- 10 + 30	- 10 + 30	- 10 + 30
Switching time	ms	8 to 15	8 to 15	8 to 15
Mechanical life	operations	≤ 1.5 x 10 ⁷	≤ 1.5 x 10 ⁷	≤ 1.5 x 10 ⁷
Construction	Stainless steel, brass NBR, PA 66	●	●	●
Weight	g	35	35	35
Duty factor		100% ED	100% ED	100% ED
Insulation class	IEC 85	F	F	F
Degree of protection (IEC 529)	with connector 81 516 082 (see page 5/67)	IP 65	IP 65	IP 65
	with sub-bases 81 513.../81 517... (see page 5/66)	IP 20	IP 20	IP 20

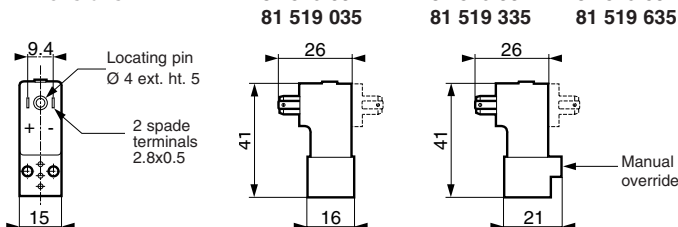
Pneumatic connections

Geometry of footprint		see below	see below	see below
via miniature pilot sub base	81 514 101	see page 5/52	see page 5/52	see page 5/52
On modules	81 513 100/200/600	see page 5/53	see page 5/53	see page 5/53
	81 516 100/200	see page 5/53	see page 5/53	see page 5/53

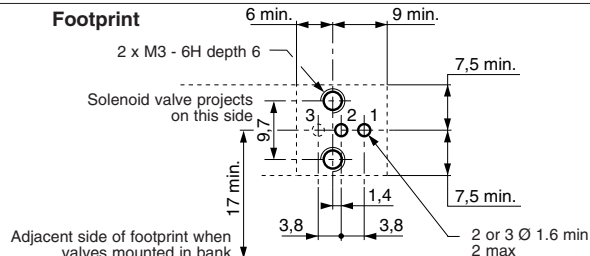
Electrical connections

2 spade terminals on coil	90° rotatable	see below	see below	see below
via connector 81 516 082	90° rotatable	see page 5/67	see page 5/67	see page 5/67
via miniature pilot sub base	types 81 513.../81 514...	see page 5/52	see page 5/52	see page 5/52
via miniature sub base	types 81 513.../81 517...	see page 5/66	see page 5/66	see page 5/66

Dimensions



Footprint



Other information

Note: Our intrinsically safe miniature solenoid valves have a locating pin which prevents their mounting on our standard sub-bases. They must be used only with our sub-bases approved to EEx ia II C T6 as shown on page 6/6. To achieve EEx ia II C T6 when using a plug type connector, only our connector 81 516 082 (approved for use with our miniature solenoid valves 81 519...) must be used.

To order, specify :

Standard products

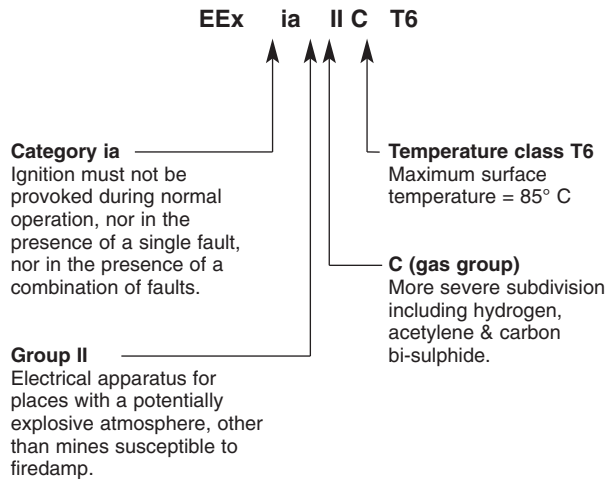
1 Part number
Example : Intrinsically safe miniature solenoid
valve - 81 519 034

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

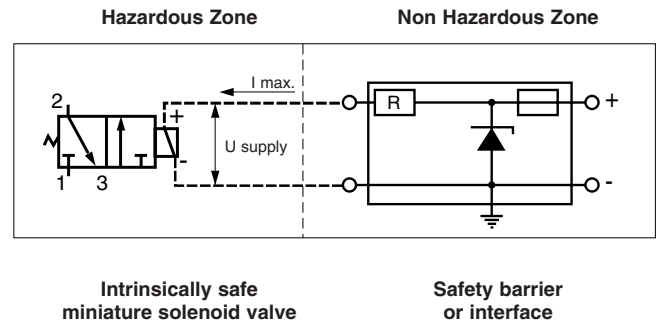
General information

Low consumption (0.7W), CROUZET 3/2 miniature solenoid valves comply with European Standards EN 50014 and EN 50020 relating to equipment operating in potentially explosive atmospheres. These intrinsically safe products are recommended for the chemical, petrochemical, gas and mining industries, etc.



Important :

These intrinsically safe miniature solenoid valves must be individually connected to an approved safety barrier. Placed in a safe zone, these barriers make it possible to supply intrinsically safe miniature solenoid valves installed in a hazardous zone.



Safety description (to LCIE approval no. 93 C 6014 X)

	81 519 034 /334	81 519 035 /335
U source EEx	≤ 18 V	≤ 28 V
I max. / coil	≤ 74 mA	≤ 37 mA

U supply = source of intrinsically safe supply to the miniature solenoid valve.

I max. / coil = maximum current across the coil.

The electrical connection between the safety barrier (or interface) and the miniature solenoid valve can be made with ordinary wires or cables. The inductance of the connecting line between the safety barrier and the solenoid valve must be less than 0.5 mH.

Recommended barriers and interfaces

These CROUZET recommended safety barriers and interfaces can be obtained from the manufacturers indicated below. When ordering, specify that they are to be used to supply miniature solenoid valves (type 81 519) EEx ia II C T6, LCIE no. 93.C6014 X.

For 12 Vdc miniature solenoid valves part numbers : 81 519 034 / 81 519 334

Manufacturer	Barrier reference	Interface reference	Approval laboratory	Gas group	Authorized zones	V supply barrier / interface
GEORGIN	BZC 13/100/1/179	AVB 131	LCIE	II C	all zones	12 Vdc +/- 10%
MEASUREMENT TECHNOLOGY LTD	MTL 715 +		LCIE	II C	all zones	220 Vac +/- 10%
STAHL	9004/01-168-050-00	ICS 1000 9451/12-01-10	BASEEFA	II C	all zones	12 Vdc +10% -15%
			PTB	II C	zones 1 and 2	12 Vdc +10% -15%
			BVS	II C	zones 1 and 2	24 Vdc +10% -15%

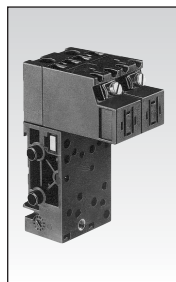
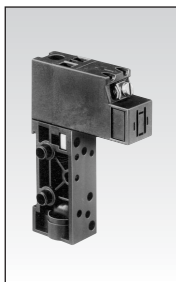
For 24 Vdc miniature solenoid valves part numbers : 81 519 035 / 81 519 335

Manufacturer	Barrier reference	Interface reference	Approval laboratory	Gas group	Authorized zones	V supply barrier / interface
GEORGIN	BZC 24/63/1/4A	AVB 109	LCIE	II C	all zones	24 Vdc +/- 10%
MEASUREMENT TECHNOLOGY LTD	MTL 728 + MTL 708 +		LCIE	II C	all zones	220 Vac +/- 10%
		MTL 2241	BASEEFA	II C	all zones	20 to 26.6 Vdc
		MTL 3021	BASEEFA	II C	all zones	21 to 35 Vdc
PEPPERL & FUCHS	Z 428 EX		BASEEFA	II C	all zones	180 to 260 Vac
		KHD3-ISD/EX148-90A	BASEEFA	II C	all zones	20 to 35 Vdc
STAHL	9004/01-280-025-00		BASEEFA	II C	all zones	20 to 26.5 Vdc
		ICS 1000 9451/12-02-10	PTB	II C	zones 1 and 2	20 to 35 Vdc
		ELVA-15/130+A230	BVS	II C	zones 1 and 2	20 to 30 Vdc
A PUISSANCE 3			LCIE	II C	all zones	230 V 50 Hz general power supply + 24 Vdc control



Sub-bases for intrinsically safe miniature solenoid valves EEx ia II C

LCIE approval
no. 93 C 6014X



Part numbers

Sub-bases for use with :	for tube Ø ext (mm)		
Miniature solenoid valves intermediate sub-base	4	—	—
81 519... end bases	4	—	—
Miniature control valves intermediate sub-base,	4	81 513 075	—
81 513... width 17.5	6	81 513 076	—
Miniature control valves intermediate sub-base,	4	—	81 517 106
81 516... width 35	6	—	81 517 206
Sub-base width	mm	1 sub-base 17.5	1 sub-base 35

Function

Pneumatic and electrical connections	miniature solenoid valves 81 519 034 /035 /334 /335 miniature control valves 81 513 100 /200 /600 miniature control valves 81 516 100 /200	— 1 footprint —	— 2 footprints 1 footprint
--------------------------------------	---	-----------------------	----------------------------------

Characteristics

Permitted fluids	lubricated (ASTM2) or not	air or inert gases	air or inert gases
Operating pressure	bars	0 to 8	0 to 8
Temperature	operating °C	-10 to +50	-10 to +50
	of fluid °C	-10 to +30	-10 to +30
Sub-base fixing	by clip	—	—
	by end bases	81 513 011	81 513 011
Rail mounting	by rail EN 50022 width 35 mm	•	•
Construction	NBR, PA 66 fireproof, brass	•	•
Integral pressure indicator		—	—
Weight	g	55	105
Degree of protection		IP 20	IP 20

Pneumatic connections

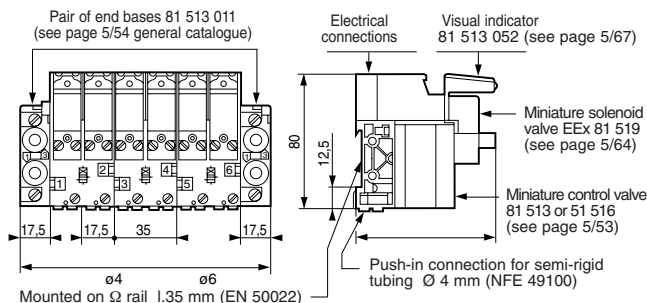
Port 1 function	common supply	—	—
Port 3 function	common exhaust	—	—
Port 2 function	miniature solenoid valve 81519...	—	—
	miniature control valve 81 513 200 /600	output at rest (NO)	output at rest (NO)
Port "2" function	miniature control valve 81 513 200 /600	—	output at rest (NO)
	miniature control valve 81 516...	—	output at rest (NO)
Port 4 function	miniature control valve 81 513 100 /200	output operating(NC)	output operating(NC)
	miniature control valve 81 516...	—	output operating(NC)
Port "4" function	miniature control valve 81 513 100 /200	—	output operating(NC)
Integral push-in fittings (NFE 49100)		•	•

Electrical connections

Integral electrical connections	number	1	2
Screw clamp terminals	clamping capacity : 3 mm ²	2 (A1 and A2)	2 (A1 and A2)

Dimensions

Associable sub-bases for miniature control valves EEx 81 513... and 81 516...



Other information

Note :

Sub-bases **81 513 075 / 076** and **81 517 106 / 206** must be used with end bases **81 513 011** and intermediate module **81 513 001** (if required).

Products and specifications subject to change without notice.

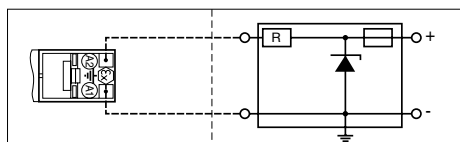
Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

General information

CROUZET intrinsically safe sub-bases conform to European Standards EN 50014 and EN 50020 relating to equipment operating in potentially explosive atmospheres.

These sub-bases must be individually connected to an approved safety barrier. (See recommended barriers & interfaces on page 5/65.)

Hazardous Zone Non Hazardous Zone



Sub-base for intrinsically safe miniature solenoid valve

Safety barrier

A1 = - terminal
A2 = + terminal

Distinctive features of the EEx sub-base :

- No integral electrical common
- No provision for earth pin
- There is provision for the locating pin for each intrinsically safe miniature solenoid valve 81 519.

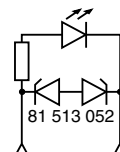
Note :

In order to satisfy the safety conditions of EEx ia II C T6 our intrinsically safe miniature solenoid valves 81 519 ... must be used **ONLY** with the sub-bases shown on page 5/66. These sub-bases cannot be used for mounting our standard range of 81 519 ... miniature solenoid valves (non approved).

Part numbers

Visual indicator	24 V - 50-60 Hz ~	81 513 052	—	—
Connector for solenoid valve		—	81 516 082	—
Adaptor sub-base for CNOMO 05-8 footprint		—	—	79 453 569

Symbol

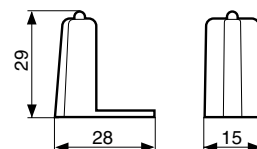


Characteristics

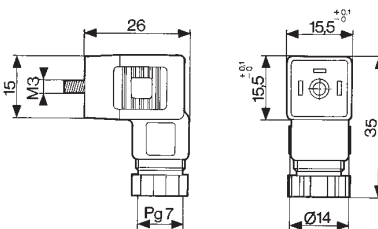
Mounts between pilot solenoid valve and sub-base		•	—	—
Supplied in multiples	of 5 of 10	•	—	—
Packet of 10 pieces		—	•	—
Fixing		—	—	2 screws
Weight	g	6	10	M4x10
Connection			1 Control signal 2 signal ⊥ Earth (4)	—

Dimensions

81 513 052



Note :
When using LED indicators only our indicator 81 513 052 (approved for use with our miniature solenoid valves 81 519...) should be used to achieve EEx ia II C T6.



Note :
When using plug connectors, only our connectors 81 516 082 (approved for use with our miniature solenoid valves 81 519 ...) should be used to achieve EEx ia II C T6.

79 453 569

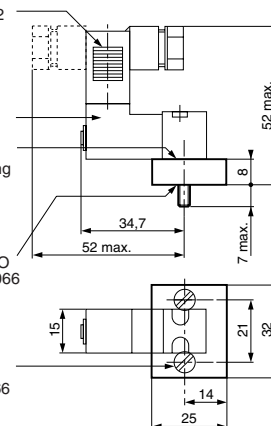
Connector ref. 81 516 082 (rotatable in 90° steps)

Miniature solenoid valve 81 519... see page 5/64

CNOMO footprint E 06-36-120N for mounting miniature solenoid valve 81 519

Mounting on CNOMO 06-05-80 / NFE 49-066 footprint

Fixing onto CNOMO 06-05-80/NFE 49-066 footprint by 2 cap screws M4x10 (NFE 25-127)



To order, specify :

Standard products

1 Part number

Example : Sub-base for miniature solenoid valve - 81 514 166



Intrinsically safe pressure switches EEx ia II C T6

LCIE approval
no. 93 C 6015X

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



Part numbers

81 513 530

DIN rail 35 mm
EN 50022

Fixing

Function control
Version manual override

pressure
with

Symbol



Characteristics

Permitted fluids	air, inert gases and liquids		•
Adjustable switching pressure (* set at 0.3)	bar	2 to 8	
Hysteresis	at 1 bar	0.5	
	at 2 bars	0.6	
	at 4 bars	0.8	
	at 6 bars	1	
Pressure indicator			•
Temperature	operating ° C	- 10 + 50	
	of fluid ° C	- 10 + 30	
Mechanical life	operations	10 ⁶	
Maximum voltage	V	60 Vdc	
Construction	POM, brass, AU4G		•
Weight	g	48	
Degree of protection	IEC 529	IP 20	

Pneumatic connections

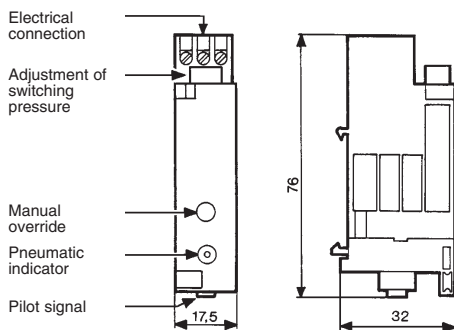
	Push-in connection for semi-rigid tubing	•
Connection	Ø 4 mm (NFE 49100)	
	Tapped holes 1/8 BSP	—

Electrical connections

Integral electrical connections		•
Screw terminals	number	3 (1-2-4)
Wire cross-section	mm ²	0.75
Terminal capacity	mm ²	3

Dimensions

81 513 530



Other information

On request :
- Low pressure version from 0.2 to 1.2 bars
- Vacuum version adjustable from -0.3 to -1 bar

To order, specify :

Standard products

1 Reference

Example : Intrinsically safe pressure switches -
81 513 530

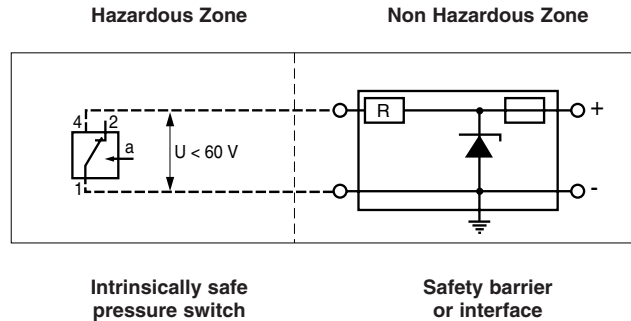
Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

General information

CROUZET intrinsically safe pressure switches conform to European Standards EN 50014 and EN50020 relating to equipment operating in potentially explosive atmospheres. These intrinsically safe products are recommended for the chemical, petro-chemical, gas and mining industries, etc.

These intrinsically safe pressure switches must be individually connected to an approved safety barrier. Placed in a safe zone, these safety barriers make it possible to supply intrinsically safe pressure switches installed in a hazardous zone.



1 = common
2 = NC contact
4 = NO contact

The electrical connection between the safety barrier (or interface) and the pressure switch can be made with ordinary wires or cables.

The maximum intrinsically safe supply voltage must not exceed 60V.

Recommended barriers and interfaces

These CROUZET recommended safety barriers and interfaces can be obtained from the manufacturers indicated below. Specify when ordering that they are to be used to supply intrinsically safe pressure switches (type 81 513) EEx ia II C T6, LCIE no. 93.C6015 X.

For CROUZET intrinsically safe pressure switches

Manufacturer	Barrier reference	Interface reference	Approval laboratory	Gas Group	Authorised zones
GEORGIN	BZC 24/20/1/275	RD 11	LCIE	II C	all zones
		RD 21	LCIE	II C	
			LCIE	II C	
MEASUREMENT TECHNOLOGY LTD	MTL 787 S + MTL 707 +		BASEEFA	II C	all zones
			BASEEFA	II C	
		MTL 2210 B	BASEEFA	II C	
		MTL 3011	BASEEFA	II C	
		MTL 4013	BASEEFA	II C	
PEPPERL & FUCHS GB LTD	Z 428 EX		BASEEFA	II C	all zones
		KHD2-RW1/EX1	PTB	II C	
		KHA6-RW1/EX1	PTB	II C	
STAHL	9001/01-252-060-14		PTB	II C	all zones
		ICS PAK 9250	PTB	II C	
		ICS 1000 9201/04-...-24	PTB	II C	

Mounting

Cabinet

Machine

Connectors EEx ia II C T6

When using plug connectors, only our connectors 81 516 082 (which have been approved for use with our miniature solenoid valves 81 519 ...) should be used, to comply with EEx ia II C T6.

Miniature solenoid valves EEx ia II C T6

Indicators EEx ia II C T6

When using LED indicators, only our indicators 81 513 052 (which have been approved for use with our miniature solenoid valves 81 519...) should be used, to comply with EEx ia II C T6.

Valve modules

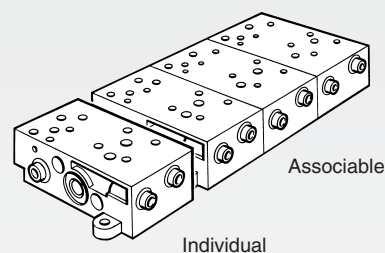
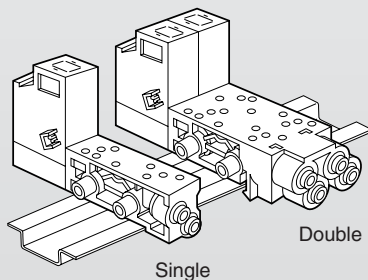
- Poppet
 - 3/2 monostable (17.5 mm)
 - 4/2 monostable (17.5 mm)
- Slide valve
 - 4/2 bistable (35 mm)
 - 4/2 monostable spring-return (35 mm)

Sub-bases EEx ia II C T6

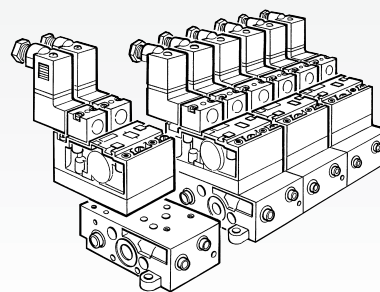
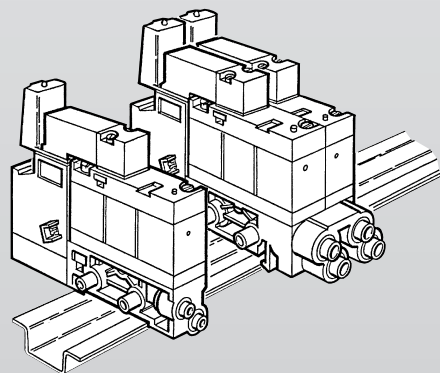
For miniature solenoid valves

For valve modules

For valve modules

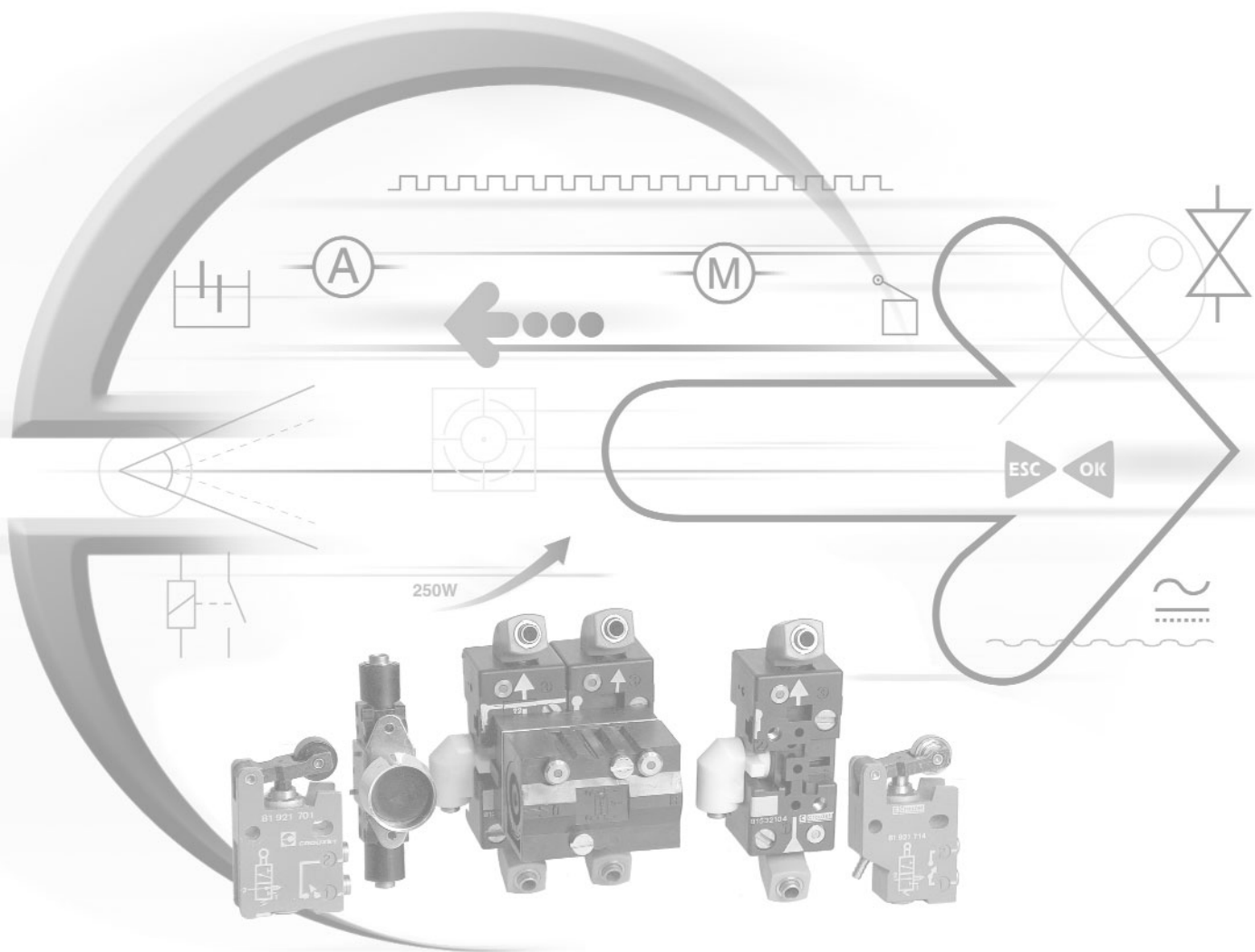


Complete product EEx ia II C T6



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



Multi-Fluid Solenoid Valves



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Standard 2/2 miniature solenoid valves for fluids and inert gases

- Variable orientation coil
- Low power consumption : 1 W
- Quick to fit together, no tools needed

Mounting

Individual

Bank end valves (1 pair)

Intermediate valve

Part numbers

Orifice diameter (0.8 mm)	CV (0.2)	(KV) (0.3)	Adjustment range psi (15>30)	(bar) (1>8b)	Power 1W
------------------------------	-------------	---------------	------------------------------------	-----------------	-------------

NC
81 546 001

NC
81 547 001

NC
81 547 501

Standard features

Voltage	24V ~
Electrical connections	2.8 x 0.5 blade terminals (W7D5) at 9.4 mm centres
Fluid connection	tapped holes M5
Manual override + pressure indicator	without

General characteristics

Response time	5 to 15 ms
Operating temperature	- 5 °C +50 °C
Viscosity range	up to 30 cst
Vibration resistance	up to 5 g
Air flow rate (at 2 bars)	15 to 40 NI/mn
Maximum switching rate	30 Hz
Weight	Individual mounting 32.5 g Bank end/inner valves 35 g
Body material	Glass-reinforced polyamide 6.6
Mechanical life (operations)	1.5 x 10 ⁷
UL and cUL approval	MH 15085

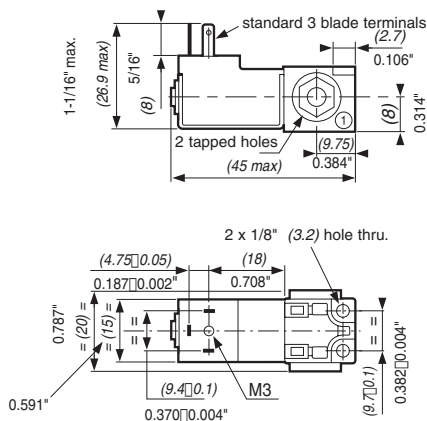
Accessories for 2/2 miniature solenoid valves

Connector for solenoid valve (see page 5/11)	81 516 082
Visual indicators	24 V-50/60 Hz CC 48 V-50/60 Hz AC 110 V-50/60 Hz AC 220 V-50/60 Hz AC
LED seal (see page 5/67)	12-24 V ~ --- 81 513 052 81 513 055 81 513 058 81 513 059 81 513 064

Dimensions

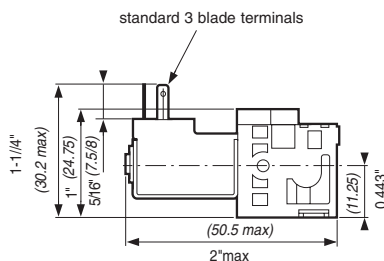
Individual

81 546 0



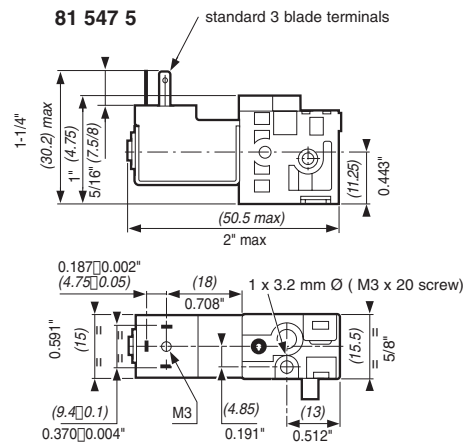
Bank end valves (1 pair)

81 547 0



Intermediate valve

81 547 5



Use (metric) dimensions for critical data

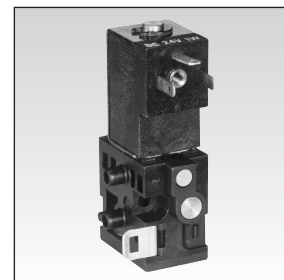
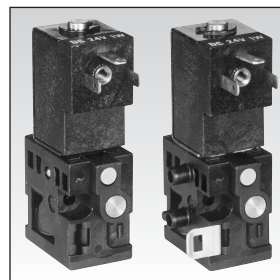
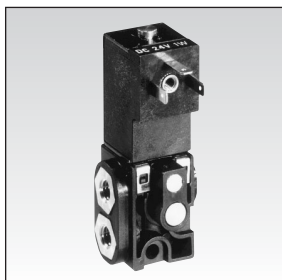
Other information	To order, specify :
For options see page 5/74	Standard products Standard products, non stocked 1 Part number 2 Accessory Example : Standard 2/2 miniature solenoid valve 81 546 001 - LED seal 81 513 064

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Standard 3/2 miniature solenoid valves for fluids and inert gases

- All connections on one face
- Small size



Mounting

Individual

Bank end valves (1 pair)

Intermediate valve

Part numbers

Orifice diameter	CV	(KV)	psi	Adjustment range	Power
(0.8 mm)	.2	(0.3)	15>120	(1>8 bar)	1W
(0.8 mm)	.2	(0.3)	15>120	(1>8 bar)	2W

NC

81 548 010

NC

81 549 010

NC

81 549 510

Standard features

Voltage	24V ~
Electrical connections	2.8 x 0.5 blade terminals (W7D5) at 9.4 mm centres
Fluid connection	tapped holes M5
Manual override	by impulse
Pressure indicator	without

General characteristics

Response time	5 to 15 ms
Operating temperature	- 5 °C +50 °C
Viscosity range	up to 30 cst
Vibration resistance	up to 5 g
Air flow rate (at 2 bars)	15 to 40 NI/min
Maximum switching rate	30 Hz
Weight	Individual mounting: 32.5 g Bank end/inner valves: 35 g
Body material	Glass-reinforced polyamide 6.6
Mechanical life (operations)	1.5 x 10 ⁷
UL and cUL approval	MH 15085

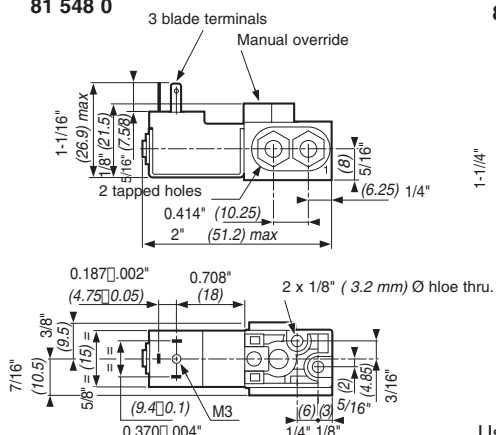
Accessories for 3/2 miniature solenoid valves

Connector for solenoid valve (see page 5/11)	81 516 082
Visual indicators	24 V-50/60 Hz DC: 81 513 052 48 V-50/60 Hz AC: 81 513 055 110 V-50/60 Hz AC: 81 513 058 220 V-50/60 Hz AC: 81 513 059
LED seal (see page 5/55)	12-24 V ~ ~: 81 513 064

Dimensions

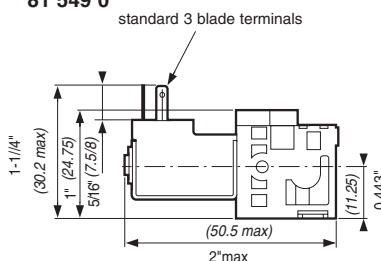
Individual

81 548 0



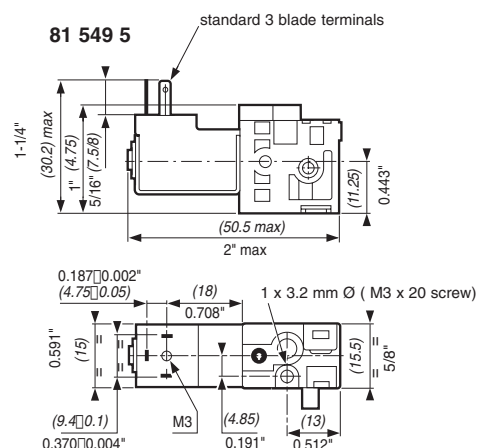
Bank end valves (1 pair)

81 549 0



Intermediate valve

81 549 5



Use (metric) dimensions for critical data

Other information

For options see page 5/74

To order, specify :

Standard products

1

Part number

2

Accessory

Standard products,
non stocked

Example : Standard 3/2 miniature solenoid valve
81 548 010 - LED seal 81 513 064

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Miniature solenoid valves for fluids and inert gases

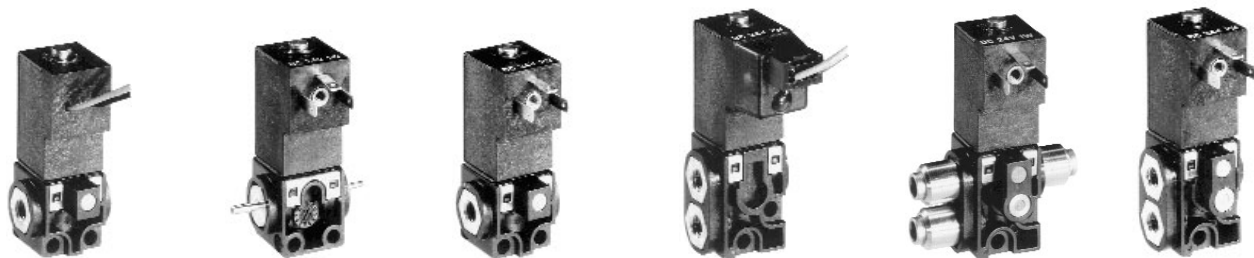
2/2 miniature solenoid valves for fluids

3/2 miniature solenoid valves for fluids

Mounting	Single	Bank end valves	Intermediate valve	Single	Bank end valves	Intermediate valve
Type	81 546 0	81 547 0	81 547 5	81 548 0	81 549 0	81 549 5
Functions	Please consult us for more information on the options available					
NO						
NC	●	●	●	●	●	●
Bore diameter						
Ø 0.8 mm (1 • 8 bar)	●	●	●	●	●	●
Ø 1.2 mm (- 0.9 • 3 bar)	○	○	○	○	○	○
Ø 1.5 mm (0 • 2 bar)	○	○	○	○	○	○
Voltage						
6 V ---	○	○	○	○	○	○
12 V ---	○	○	○	○	○	○
24 V ---	●	●	●	●	●	●
48 V ---	○	○	○	○	○	○
24 V ~ 50/60 Hz						
48 V ~ 50/60 Hz						
110 V ~ 50/60 Hz						
220-230 V 50/60 Hz						
Electrical connections						
Blade terminals 2.8 x 0.5 mm	●	●	●	●	●	●
Latch-in connector						
Output via moulded connector lead (0.30 m)						
Fluid connections						
M5 tapped hole	●	●	●	●	●	●
Plain ends	○	○	○	○	○	○
Push-in connector Ø 4 mm	○	○	○	○	○	○
Manual override						
without	●	●	●	○	○	○
by impulse	○	○	○	●	●	●
maintained	○	○	○	○	○	○
Pressure indicator						
with (except for Ø 1.2 mm items used in vacuum applications)		○	○	○	○	○
without	●	●	●	●	●	●

● Characteristics of standard miniature solenoid valves (see 5/72 and 5/73)

○ Options available for the entire range



Output via moulded connector lead (0.3 m)

Barbs

Manual override by impulse

Latch-in connector
Accessory for connection option
Part no : 79 452 899
(wire length : 0.30 m)

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

Maintained manual override, no indicator

To order, specify :

Standard products, non stocked

1

Function

2

Orifice diameter

3

Voltage

4

Electrical connection

5

Fluid connection

6

Manual override

7

Pressure indicator

Example : 81 548 0 - NO Ø 0.8 - 48 VAC - Blade terminals 2.8 x 0.5 mm M5 - Manual override by impulse - With pressure indicator

Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Quality

The quality of CROUZET pneumatic and electro-pneumatic components is one of our very first considerations, from product design through to commercialisation and eventually delivery to customers. All CROUZET services are designed in accordance with the company's Quality Assurance Manual and the International Standards Directives **ISO 9001**.

The production site where our pneumatic and electro-pneumatic components are manufactured (la Plaine factory in Valence) has **ISO 9001** approval, which ensures the very highest level of quality.

Standards and approvals

Our pneumatic and electro-pneumatic components are designed according to IEC international recommendations, European standards (EN) and some in line with American standards (UL-CSA).

Proof of conformity with these standards and recommendations is demonstrated by the "approval" (the mark or certificate of conformity issued by an authorised body) or by the manufacturer's declaration of conformity (drawn up in accordance with the ISO / IEC 22 guide).

Unless otherwise indicated, as specified in the "characteristics" table, our electro-pneumatic components comply with standards IEC 536 (class I) and IEC 664-1 (Category II).

Rules and regulations

EC directives

■ Our pneumatic components are compatible with European standard EN 983 (safety of machinery : safety of fluid power systems and their components) and can therefore be used within the scope of the European Community's machinery directive 89/392/EEC.

■ Our electro-pneumatic components are compatible with the European Community's low voltage directive 73/23/EEC and with European standards :

- EN 60 204 (safety of machinery : electrical equipment of machines), in accordance with International standard IEC 204-1
- EN 983 (safety of machinery : safety of fluid power systems and their components)

They can therefore be used within the scope of the European Community's machinery directive 89/392/EEC.

They conform to the European Community's EMC directive 89/336/EEC.

■ Our two-hand controls conform to the European directive 93/44/EEC and can be used within the scope of the machinery directive 89/392/EEC.

Our two-hand safety start modules conform to the draft European directive EN 574.

Protection of the environment

The modern concept of protection of the environment is an integral part of the manufacture of our pneumatic and electro-pneumatic components, from product design through to packaging.



Products and specifications subject to change without notice.

Order/Technical Support – Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Crouzet:

<u>81501025</u>	<u>81521501</u>	<u>81522501</u>	<u>81523601</u>	<u>81529003</u>	<u>81529005</u>	<u>81529007</u>	<u>81529025</u>	<u>81532001</u>	<u>81532104</u>
<u>81541001</u>	<u>81550001</u>	<u>81550201</u>	<u>81520601</u>	<u>81529004</u>	<u>81522504</u>	<u>81523201</u>	<u>81526001</u>	<u>81552101</u>	<u>81551001</u>
<u>81529010</u>	<u>81503720</u>	<u>81536801</u>	<u>81506720</u>	<u>81550601</u>	<u>81550401</u>	<u>81552105</u>	<u>79450609</u>	<u>81533001</u>	<u>81529002</u>
<u>81529901</u>	<u>81541005</u>	<u>81506025</u>	<u>81552002</u>	<u>81552001</u>	<u>79452808</u>	<u>81503710</u>	<u>81551104</u>	<u>81507720</u>	<u>81521507</u>
<u>81525101</u>	<u>81531001</u>	<u>81506940</u>	<u>81526003</u>	<u>81506710</u>	<u>81533501</u>	<u>81540005</u>	<u>81507540</u>	<u>81529006</u>	<u>81503025</u>
<u>81552601</u>	<u>81529008</u>	<u>81527001</u>	<u>81552102</u>						