Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

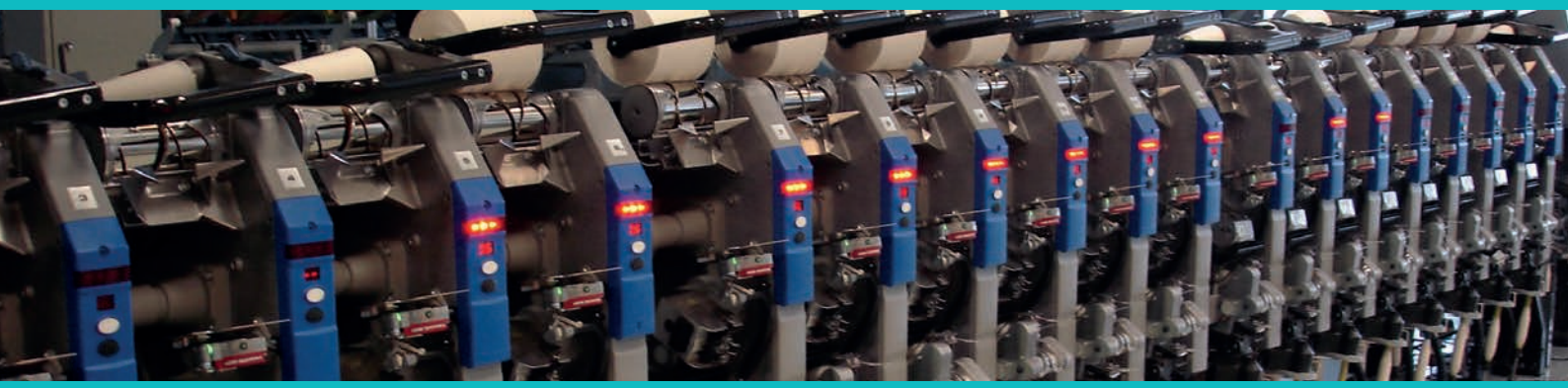
We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

WWW.CROUZET-CONTROL.COM

PNEUMATICS PRODUCTS



› Logic elements
› Position / Detectors
› Electro-pneumatic valves

CROUZET CONTROL

A BRAND OF INNOVISTA SENSORS

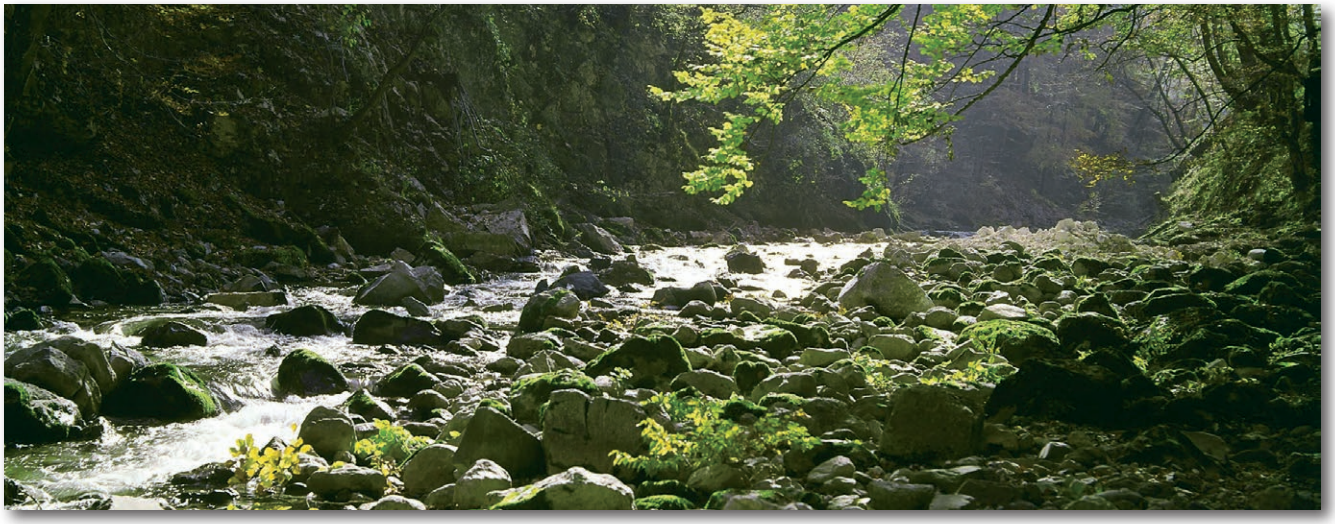
CROUZET CONTROL

- *For over 50 years, Crouzet Control, has established a reputation for providing micro-control products, micro-motors and position sensors. Read on to discover Crouzet Control's complete offer of Pneumatic products for industrial and explosive atmospheres.*
- *Always one step ahead of market trends and customer requirements, Crouzet Control is continually developing its range of both standard and customised automation components and solutions to cover all the latest commercial and industrial applications and meet the needs expressed by manufacturers of automated equipment and machinery.*
- *Throughout the world, Crouzet Control the adaptation specialist provides you with technical and industrial expertise to ensure seamless integration, whatever the equipment environment or operating requirements of the machine.*
- *InnoVista Sensors™: your trusted partner of choice to face industrial challenges of today and tomorrow.*

InnoVista Sensors™ is a worldwide industrial specialist of sensors, controllers and actuators for automated systems.

Through its brands, Crouzet Aerospace, Crouzet Automation, Crouzet Control, Crouzet Motors, Crouzet Switches and Systron Donner Inertial, InnoVista Sensors™ offers a wide range of reliable, efficient and customizable components dedicated to the Aerospace & Defence, Transportation and Industrial market and segments.

Thanks to the recognized expertise of its teams and a strong innovation policy, InnoVista Sensors™ brings performance enhancing solutions to its customers worldwide.



- *Eco-design is central to the company's "Offer Creation Process", the aim of which is to design products and services that correspond as closely as possible to customers' requirements and reduce their environmental impact throughout their life cycle.*
- Customer satisfaction will always be our prime objective.
To this end, we rely on standards ISO 9001 and ISO14001 to ensure that our design, industrialisation, manufacturing and commercialisation processes correspond to our customers' requirements.

All Crouzet Control products are fully compliant with the RoHS directive

RoHS

Expertise - for all your applications

Crouzet Control's Pneumatic expertise
provides you with an offer to meet all your automation system requirements, including systems for explosive atmospheres.
The quality of the Pneumatic components is based on a rigorous organisation which meets all current European and international directives, standards and approvals.

All our products are fully compliant with the RoHS directive and embody an eco-design concept.

The Pneumatic offer is the result of the implementation of Crouzet Control applications and expertise:
- **Listening to and analysing** your requirements
- **Expertise** in the associated applications: mechanical, electronic, sensors, etc.
- **Prototyping and industrialisation**
- **Tests**
- **Standardisation and certification** (IEC, EN, UL-CSA, ATEX, etc.)
- **Equipment** which is responsive and effective
- **International logistics** and after sales support.

Crouzet Control has developed broad expertise in ensuring that your specific needs are taken into account. Thanks to this expertise, we are continuously developing our standard products to create solutions tailored to your requirements.

▷ Some relevant areas

Water treatment, chemical factories, silos, gas storage, ports, refineries, paper industry, paint factories, vehicles (if used in ATEX conditions), etc.

Pneumatic offer for use in industrial and explosive atmospheres

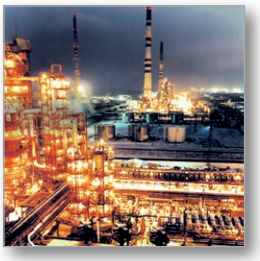
This guide has been designed to help you quickly identify the appropriate products for your requirements.Most of our pneumatic components are available in a standard range and a range for use in explosive atmospheres (ATEX): this information is given in the right-hand column on each page.

Industrial range

The standard range of pneumatic components is designed to meet requirements for industrial applications.
The operating characteristics (pressure, flow rate, service life, etc.) have been optimised to best meet these needs.

Range for use in explosive atmospheres

The range for use in explosive atmospheres has been developed specifically for applications requiring compliance with European Directive 94/9/EC, the full details of which can be found on pages 30 and 31 of this guide.
The user is responsible for ensuring the compliance of his installations. All new installations must be compliant, and replacements in the event of breakdown or maintenance must comply with this directive.



Characteristics of our ATEX components

☐ ATEX products are specifically marked in accordance with the latest versions of harmonised standards
☐ Every product is supplied with a guide specifying the usage restrictions in explosive atmospheres
☐ A copy of the approval certificate can be provided if requested at the time of order
☐ The order entry must state the usage conditions Crouzet Control states the usage restrictions on acknowledgements of receipt of order, delivery notes and invoices

Crouzet Control has produced a separate catalogue for Pneumatic products for use in explosive atmospheres.
This catalogue gives details of the entire Crouzet Control range of ATEX pneumatic products along with associated standards, certifications, directives, markings and order conditions.

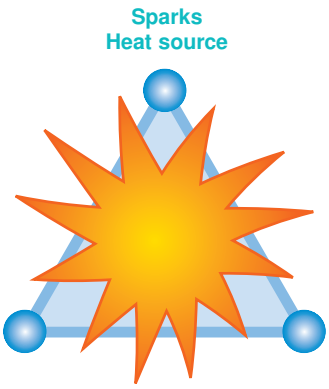
ATEX Directive 94/9/EC: general information

Principles of Directive 94/9/EC:

- The directive aims to harmonise the legislation of European Union member states in order to ensure free circulation of equipment intended for use in explosive atmospheres (gas and dust).
- Since 1 July 2003, this directive has applied to electrical, mechanical, hydraulic and pneumatic products.
- It concerns the assessment of protective devices and systems (manufacturers) as well as the design (design office), installation (installers, panel-builders) and maintenance (maintenance depts) of installations.

Definition of an explosive atmosphere:

- An explosive atmosphere is defined as a mixture of flammable substances (in the form of gas, vapour, mist or dust) with air under atmospheric conditions in which, after ignition, combustion spreads throughout the entire unburned mixture.



Application since 30 June 2003:

- Manufacturers must offer products, which comply with Directive 94/9/EC and must have a Quality Control System that has been approved by a notified body.
- Users are responsible for using equipment correctly according to the zones they have defined within their installations based on the potential risks. Existing installations must be brought into conformity with the ATEX Directive before 30 June 2006. All new products commissioned must comply with Directive 94/9/EC. In the event of breakdown, installed equipment that cannot be repaired must be replaced with equipment complying with Directive 94/9/EC

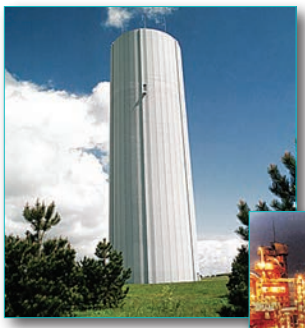
Classification:

- Potentially explosive environments are classified by zone in compliance with Directive 1999/92/EC. This directive is aimed at users. It details the minimum requirements for increasing protection of the health and safety of workers exposed to explosive atmospheres.
- ATEX Directive 94/9/EC defines categories of equipment and protection systems, which can be used in the corresponding zones.
  - **Categories M1 and M2 relate to mines (group I)**
  - **Categories 1, 2 and 3 relate to other locations (group II) often referred to as "Surface industries"**

Documents and recommendations/products:

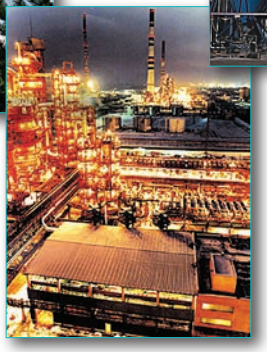
- ATEX-certified products must be supplied with an EC declaration of conformity and a user manual.
- At the time of sale, the sales representatives must check the zone in which the product is to be used. On the order, the customer must inform the manufacturer of the conditions of use.
- Manufacturers and distributors must ensure that their sales of ATEX products are traceable (so that customers who have been sold an ATEX product can be located in relation to the product's date of manufacture).
- In the case of an assembly, the product with the lowest certification level determines the level of the whole assembly.

Some relevant areas:



Water treatment

Silos



Chemical factories

Gas storage

Ports

Refineries

Paper industry

Paint factories

Vehicles (if used in ATEX conditions)

Equipment definition:

Equipment for surface industry - Group II

Zone	0	20	1	21	2	22
Type of atmosphere G = Gas, D = Dust	G	D	G	D	G	D
Presence of Explosive atmosphere	**Continuous presence** (or for long periods, i.e. more than 1000 hours per year)		**Intermittent presence** (or occasional, i.e. 10 to 1000 hours per year)		**Fleeting presence** (or rare, i.e. 1 to 10 hours per year)	
Category of equipment that can be used as per 94/9/EC dated 23/03/94	1		2		3	

Marking example:

Certified products must incorporate marking specific to Directive 94/9/EC, such as:

Crouzet Automatismes SAS
2 rue du Docteur Abel, 26902 Valence, FRANCE
Type: 81513530
Serial no:
Year of construction
CE 0081 Ⓔx II 1 G
Ex ia II C T6
LCIE 02 ATEX 6121 X
Max. amb. T: +50°C

Explanation of the marking example:

➡ **The CE marking along with the identification number of the notified body responsible for monitoring the QCS (0081 = LCIE).**

CE 0081 Ⓔx II 1 G

➡ **The Ⓔx symbol indicating that this product can be used in an explosive atmosphere followed by the equipment group (II = Surface Industries), the category (1 = continuous presence; 2 = intermittent presence; 3 = fleeting presence), and the type of explosive atmosphere G = Gas, D = Dust.**

In affixing this CE marking, the manufacturer declares that the product has been manufactured in complete conformity with the requirements of all the relevant directives.

➡ **Next line of the marking specified by the harmonised standards:**

Ex ia II C T6 X

- **Ex**: Symbol indicating that the equipment complies with one or more protection methods
- **ia**: Protection method used: intrinsic safety
- **II C**: Subdivision IIC: including hydrogen acetylene in particular, carbon bisulfur
- **T6**: Temperature Class corresponding to a max. surface temperature of 85°C
- **X**: Reference to the operating instructions for the product

➡ **The CE-Type Examination Certificate reference (if appropriate).**

LCIE 02 ATEX 6121 X

Max. amb. T: +50°C

➡ **The ambient operating temperature range.**

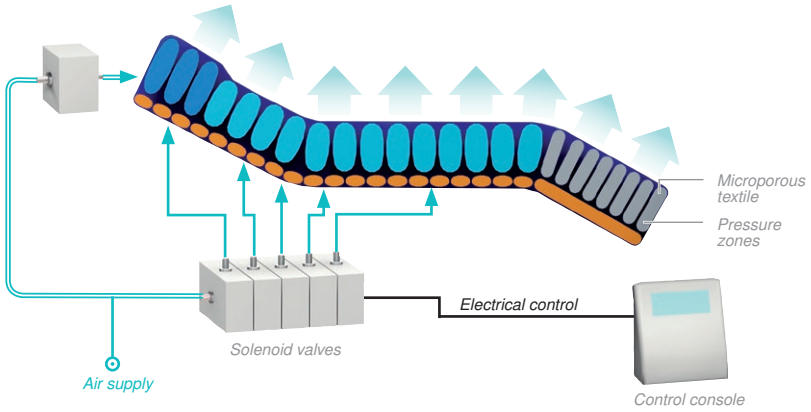
In the event of use in an explosive atmosphere caused by dust, the following items are added to the marking:

➡ **The surface limit temperature T° C for use in an explosive atmosphere caused by dust.**

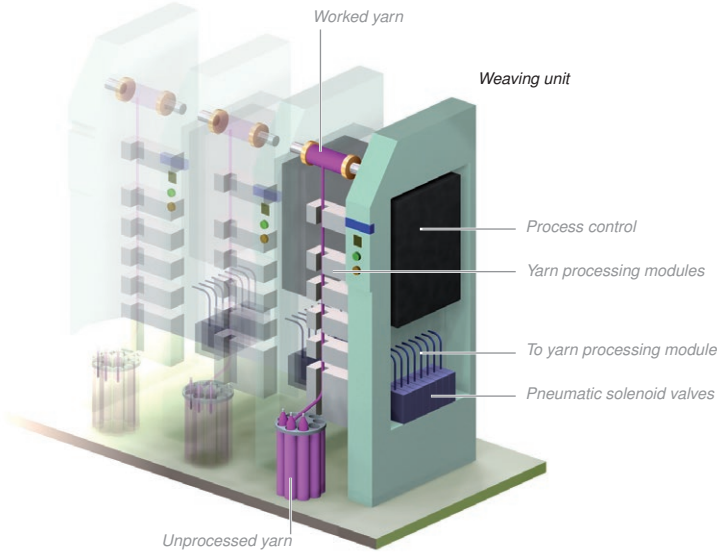
➡ **The IP rating (only for dust)**

Examples of applications:

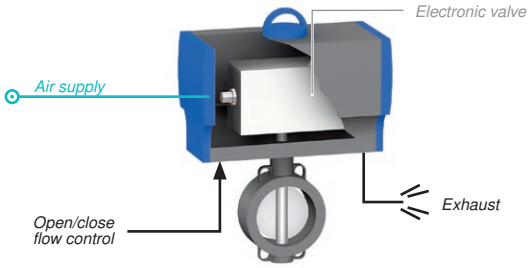
Medical mattress



Textile machine

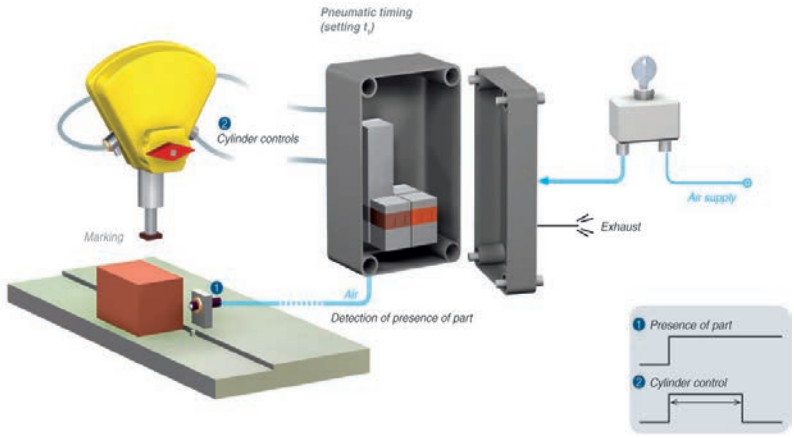


Industrial valve

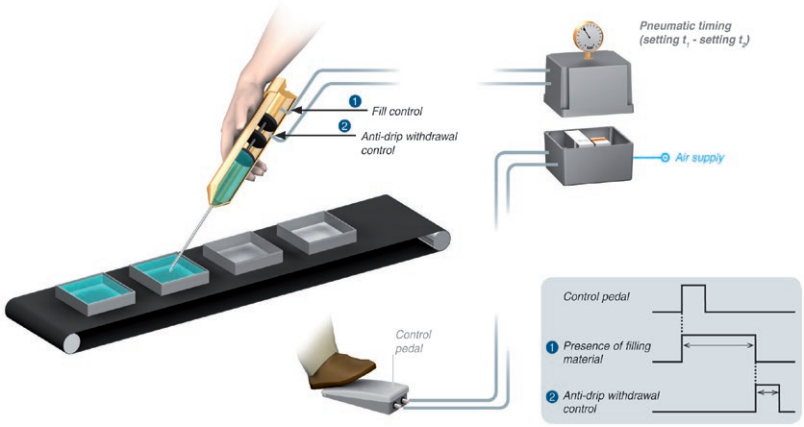


Pneumatic actuators for quarter-turn or proportional taps and valves allow open/close commands and flow rate changes to be automated.
The pneumatic actuating cylinder is operated by means of an air distributor valve built into the valve body and controlled by a solenoid valve.

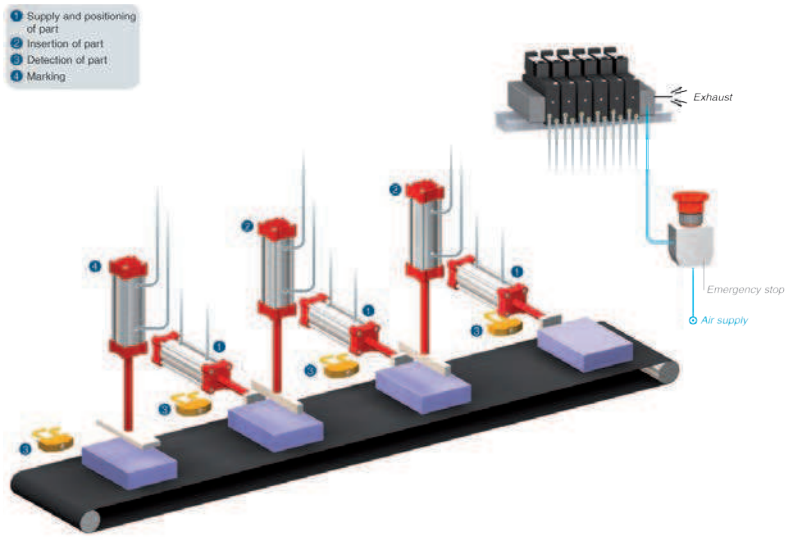
Marking control system



Semi-automatic resin filling system, with anti-drip control

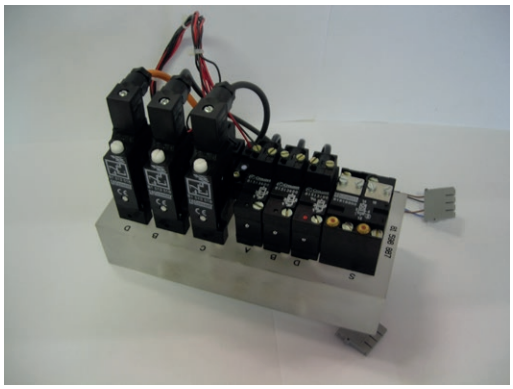


Automatic assembly system

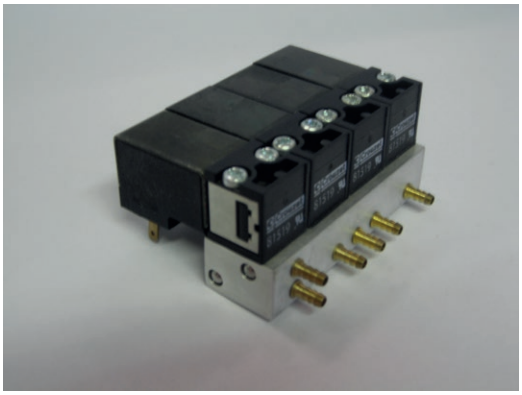


Particular realizations

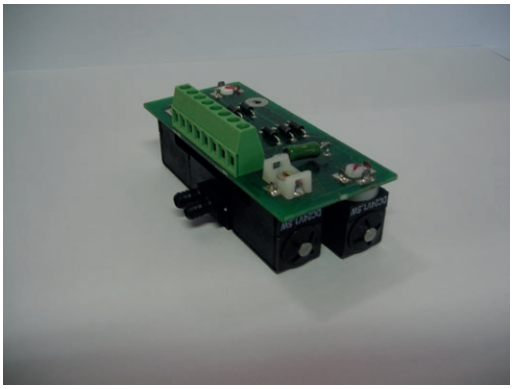
Component on manifold mastered



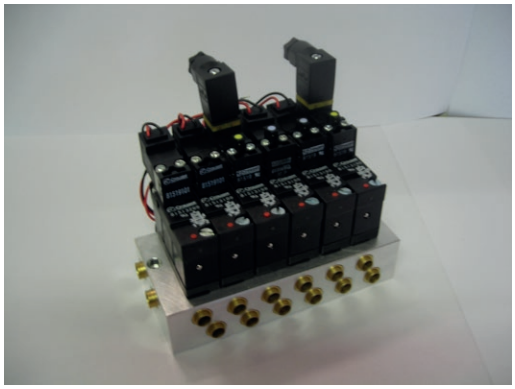
Solenoid valves on manifold



System for inflating



Valves modules on manifold

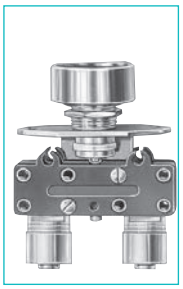


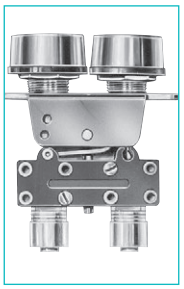
For others configurations, consult us

General summary

MANUAL ACTUATED VALVES

Push buttons diameter 12 and actuators

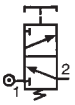


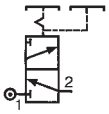


Features		Actuator color	Valve color	Push button round	Push button double round
Version	NC	black	black	81 735 511	—
		red	black	81 735 512	—
		black/red	black	—	81 733 511
	N0	black	grey	81 735 011	—
		red	grey	—	—
		black/red	grey	—	—

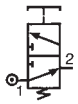
Symbol

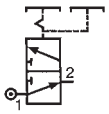
NC





NO



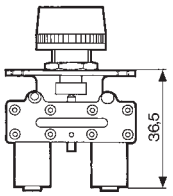


Characteristics

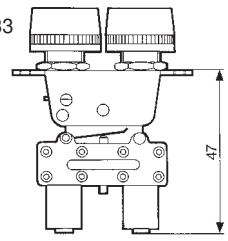
Operating pressure		bar	2 → 8	2 → 8
Orifice diameter		mm	2.7	2.7
Flow at 6 bars		Nl/mn.	200	200
Valves	NC : black		●	●
	NO : grey		●	
Operating forces (depending on actuator)		N	8 → 18	8 → 18
Effective travel		mm	1	1
Fluid: dry or lubricated air			●	●
Push-in connectors for semi-rigid tubing (NFE 49100)		mm	Ø 4	Ø 4
Operating temperature		°C	-5 → +50	-5 → +50
Mechanical life		operations	1.5 x 10^6	1.5 x 10^6
Weight		g	35	40

Dimensions

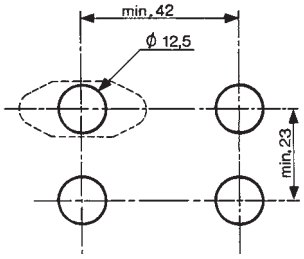
81 735



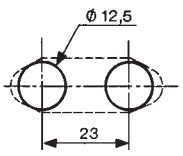
81 733

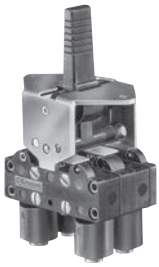


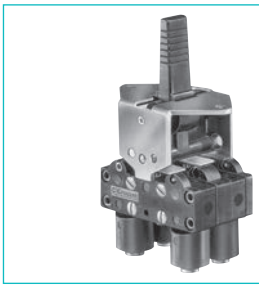
Threaded barrel

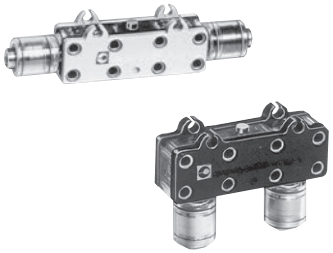


2 threaded barrels

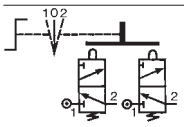


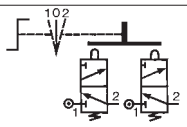






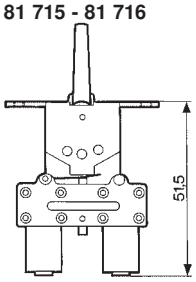
3-position lever manual return	3-position lever spring return	Horizontal outputs	Vertical outputs
81 716 511	81 715 511	81 280 510	81 281 510
81 716 512	81 715 512	—	—
—	—	—	—
—	—	81 280 010	81 281 010
—	—	—	—
—	—	—	—



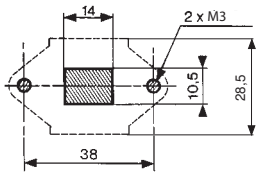


2 → 8	2 → 8	2 → 8	2 → 8
2.7	2.7	2.7	2.7
200	200	200	200
●	●	—	—
●	●	—	—
8 → 18	8 → 18	—	—
1	1	1	1
●	●	—	—
Ø 4	Ø 4	Ø 4	Ø 4
-5 → +50	-5 → +50	-5 → +50	-5 → +50
1.5 x 10^6	1.5 x 10^6	1.5 x 10^6	1.5 x 10^6
65	65	14	14

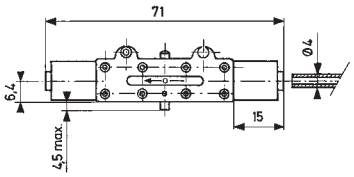
81 715 - 81 716



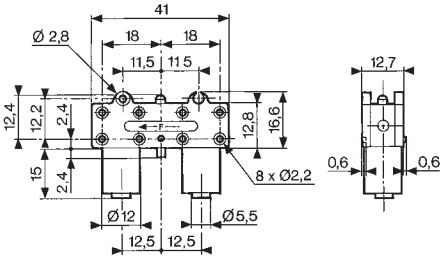
Square lever



81 280 010 - 81 280 510



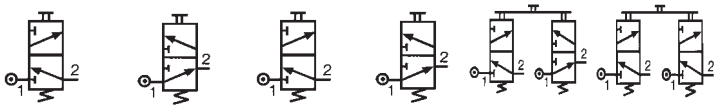
81 281 010 - 81 281 510



3/2 valves for manual actuators Ø 22 mm

3/2 valve supplied with screws for fixing the adaptator	Connection Ø4	89 543 501	89 543 101	—	—	—	—	—
	Gas 1/8	89 543 701	89 543 201	—	—	—	—	—
Valve(s) 3/2 fixed on adaptator (supplied with adaptator not assembled)	Connection Ø4	—	—	89 543 105	89 543 005	89 543 305	89 543 205	—
Adaptator for 3/2 valve on actuators Ø 22		—	—	—	—	—	—	24 679 702
Version		NC	NO	NC	NO	NC + NO	NC + NC	

Symbol

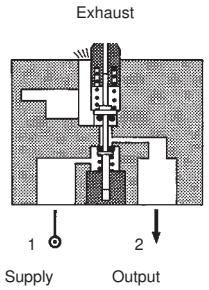


Characteristics

Operating pressure	bar	0 → 8	0 → 8	0 → 8	0 → 8	0 → 8	0 → 8	—
Orifice diameter	mm	2	2	2	2	2	2	—
Flow at 6 bars	Nl/min	112	112	112	112	112	112	—
Control force	N	12.6	12.6	12.6	12.6	12.6	12.6	—
Operating temperature in dry air	°C	-5 → +60	-5 → +60	-5 → +60	-5 → +60	-5 → +60	-5 → +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

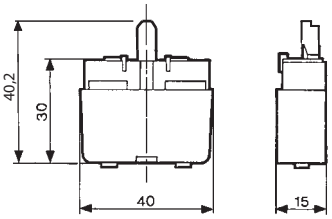
NC version



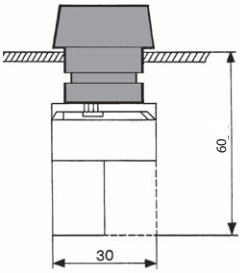
Dimensions

89 543 001 - 89 543 201

89 543 501 - 89 543 701

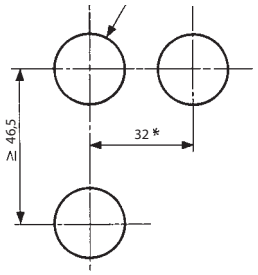


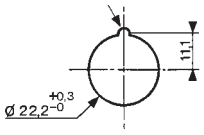
Ø 22 series



Holes drilled in panel for actuators Ø 22

EN 50007

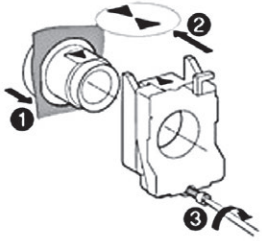


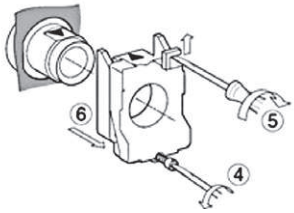


Holes drilled for the (optional) use of a round lug.

* > 40 Ø 40 push-buttons
* > 45 for lever type rotary switches

Installation





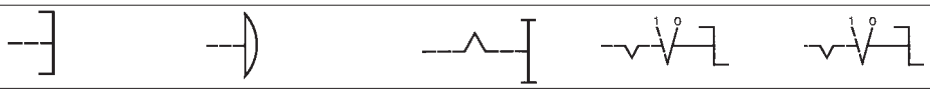
Actuators Ø 22 mm for manually operated valves





Push buttons	Red	24 678 129	24 678 173	24 678 171	—	—
	Green	24 678 128	—	—	—	—
	Black	24 678 127	24 678 172	—	—	—
2-positions rotary switches		—	—	—	24 678 174	24 678 175
3-positions rotary switches		—	—	—	—	—
Function		Flush push contact	Emergency stop plastic Ø 40	Emergency stop Ø 40 mm push-turn	Black symmetrical actuator	Long lever Black

Symbol

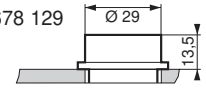


Position

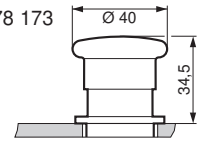
Weight	g	30	45	45	45	45

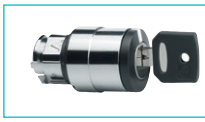
Dimensions

24 678 127 - 24 678 128
24 678 129



24 678 171 - 24 678 172
24 678 173






2-positions rotary switches	24 678 180	—	24 678 176	24 678 178	24 678 177	24 678 179	24 678 182	24 678 181
3-positions rotary switches	—							
Function	RONIS key 455 removable in position 0		Black symmetrical actuator	Black symmetrical actuator with return	Long lever Black	Black Long lever, spring to center	RONIS key 455 remov. in pos. 0 3 positions with spring to center	RONIS key 455 removable in position 0 3 fixed positions

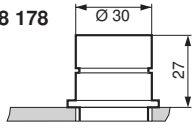
Symbol

Position

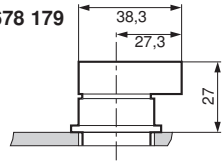
Weight	70	45	45	16	45	70	70

Dimensions

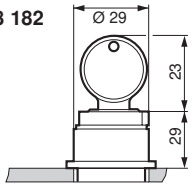
24 678 174 - 24 678 176
24 678 178



24 678 175 - 24 678 177
24 678 179



24 678 180 - 24 678 181
24 678 182



Pneumatic 2-hand control

Conforms to the Machinery Directive

Definition (conforming to EN 574 +A1)

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

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

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

Types of 2-hand control devices

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

Category 1 (EN ISO 13849) : the system should use well tried components and principles.

Category 3 (EN ISO 13849) : the system must be designed so that a single fault will not cause the loss of the safety function.

Category 4 (EN ISO 13849): the system must be designed so that an accumulation of faults must not lead to a loss of the safety function.

Synchronous action

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

Resetting the output signal

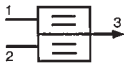
The release of a single control device interrupts the output signal, but a reset is only possible once both control devices have been released.

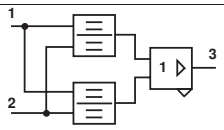
Pneumatic relay for two-hand control

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

Pneumatic relay for two-hand control	**81 580 101**	**81 580 202**
EN 574 +A1 classification	III A	III B

Symbol



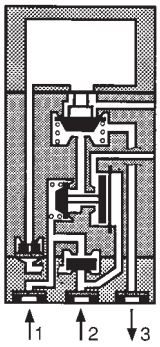


Characteristics

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

Principle of operation

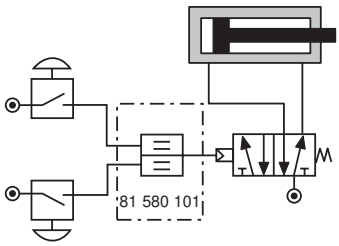
81 580 101



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.

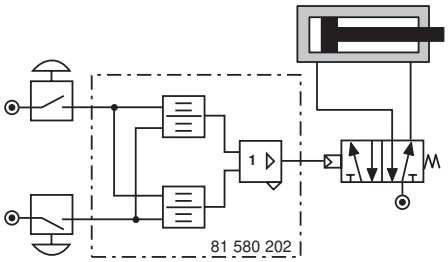
Connections (Typical application with double-acting cylinder)

81 580 101



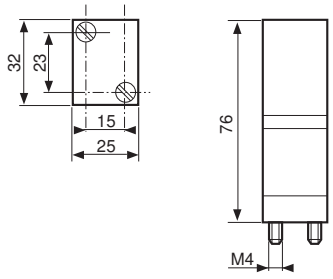
Components follow current standards

81 580 202



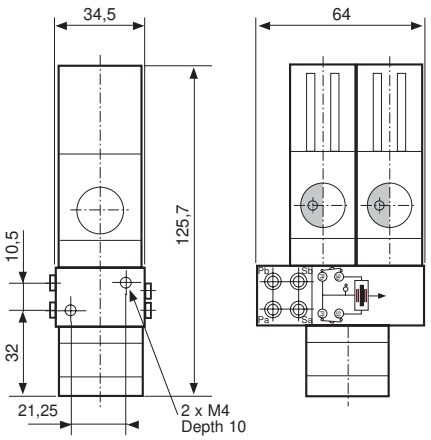
Dimensions

81 580 101



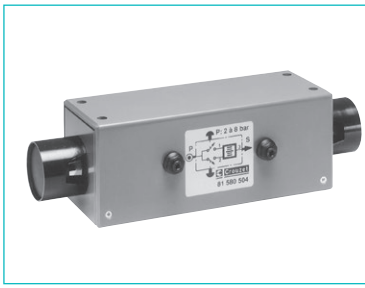
Mounted on sub-base 81 532 001
(See page 55 of Pneumatic catalogue)

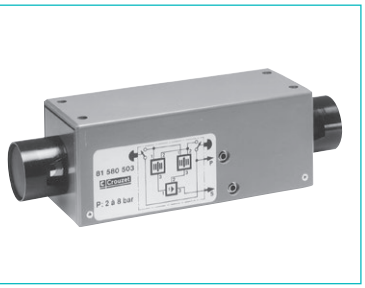
81 580 202



Two-hand pneumatic safety start module

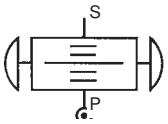
- **Conforms to the Machinery Directive and standard EN 574**
- **Including pneumatic relay to classification IIIA or IIIB depending on version**

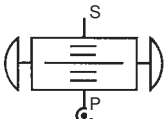




		81 580 504	81 580 503
Two-hand pneumatic safety start module			
Pneumatic relay (to EN 574)		Type III A	Type III B

Symbol



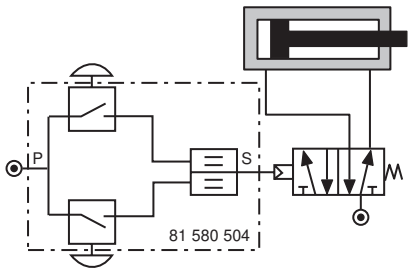


Characteristics

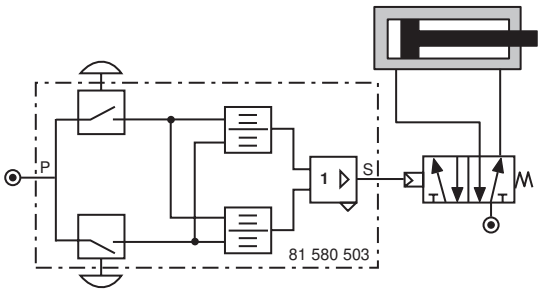
Operating pressure	bar	2 → 8	2 → 8
Orifice diameter	mm	2.5	2.5
Max. delay between input signals	s	0.2 max.	0.2 max.
Connection		Semi-rigid tubing Ø 4 (NFE 49100)	Semi-rigid tubing Ø 4 (NFE 49100)
Operating temperature	°C	-5 → +50	-5 → +50
Mechanical life	operations	1.5 x 10^6	1.5 x 10^6
Weight	g	1000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

Connections (Typical application with double-acting cylinder)

81 580 504



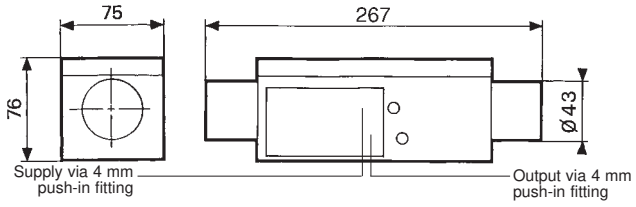
81 580 503



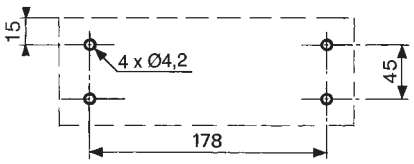
Components follow current standards

Dimensions

81 580 503 - 81 580 504

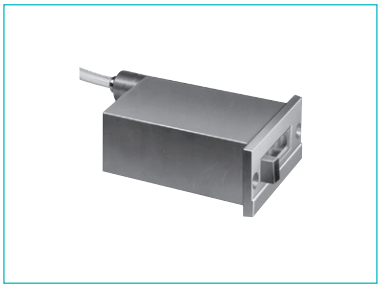


Fixing viewed from below



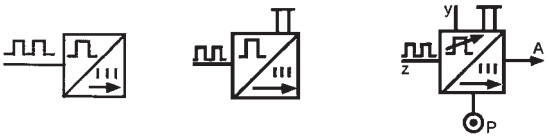
Pneumatic impulse counters

› **4, 5, 6 digits with or without reset**
› **With or without pre-selection**



Totalizer	**99 766 001**	**99 766 002**	—
Preselection counter	—	—	**89 538 201**
Version	6 digits no reset to zero	4 digits with manual zero reset	5 digits with manual or pneumatic zero reset

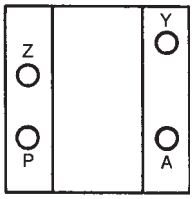
Symbol



Characteristics

Supply pressure		bar	2 → 8	2 → 8	2 → 8
Pressure to break		bar	> 0.3	> 0.3	> 0.15
Pressure to make		bar	> 1.4	> 1.4	> 0.8
Reset :	Minimum pressure	bar	—	—	2
	Reset time	ms	—	—	150
Circuit pressure			—	—	2 → 8
bar			—	—	●
Signal emitted when preset is reached			0 → +60	0 → +60	0 → +60
Operating temperature		°C	150	150	136
Weight	-	g			

Connection



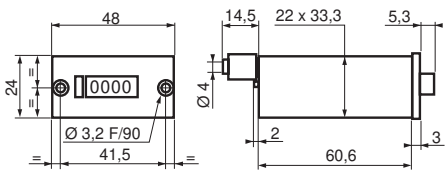
A - Output signal
P - Supply
Y - 'Reset to zero' signal
Z - Input signal

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

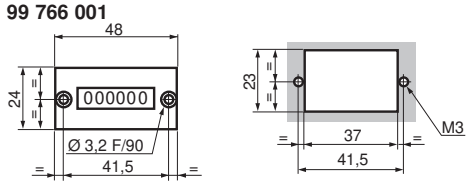
Dimensions

Connectors for semi-rigid tubing Ø 4 (NFE 49100)

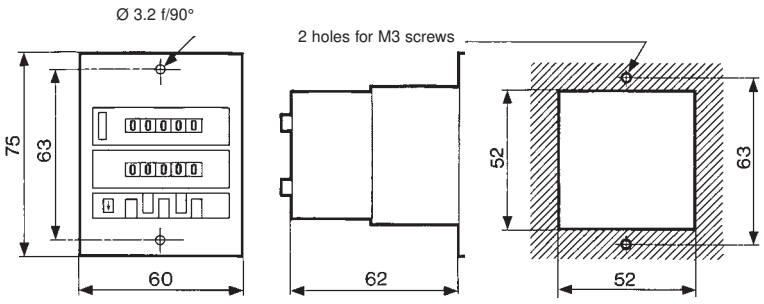
99 766 002



99 766 001



89 538 201



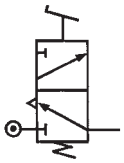
Indicators and pedal valves

› Ergonomics

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

Pneumatic indicators Ø 22	Red	**84 150 201**	—
	Green	**84 150 202**	—
	Yellow	**84 150 203**	—
	Blue	**84 150 204**	—
Pedal valve - Version NC		—	**81 999 501**

Symbol

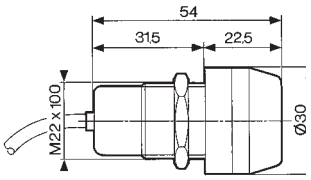


Characteristics

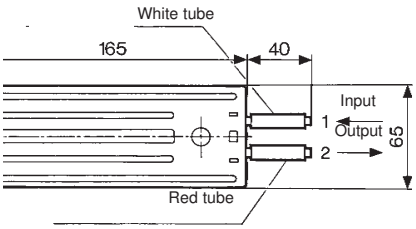
Operating pressure	bar	2 → 8	—
Push-in connection for semi-rigid tubing (NFE 49100)	mm	Ø4	Ø4
Operating temperature	°C	-5 → +50	-5 → +50
Mechanical life	operations	10^7	1.5 x 10^6
Weight	g	34	290

Dimensions

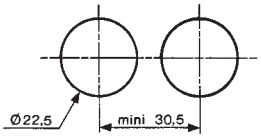
84 150 201 - 84 150 202
84 150 203 - 84 150 204



81 999 501



Holes drilled for indicators



ATEX version products are available in the following catologues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet-control.com**

POSITION DETECTORS

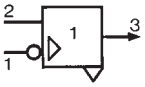
Pressure decay sensor

› **100 % pneumatic**

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

Pressure decay sensor	81 504 025

Symbol

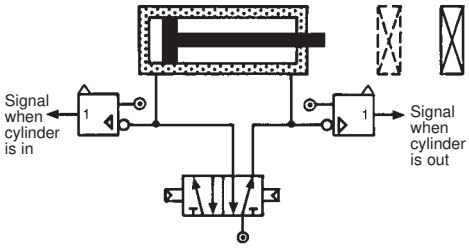


Characteristics

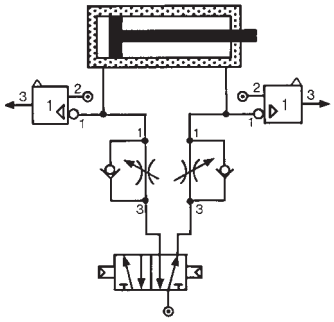
Operating pressure	bar	2 → 8
Flow at 6 bars	Nl/min	200
Tripping point with 6 bar supply	b	0.3
Connection		Sub-base page 54-55
Operating temperature	°C	-5 → +50
Mechanical life	operations	≥10^7
Weight	g	25

Connections

Without flow restrictor



With flow restrictor

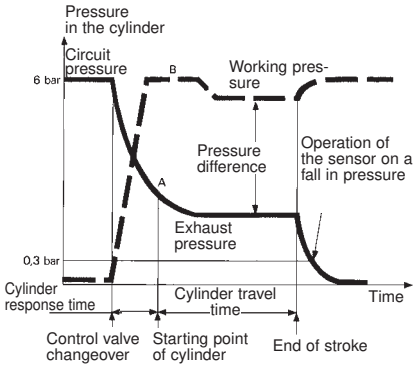


Principle of operation

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

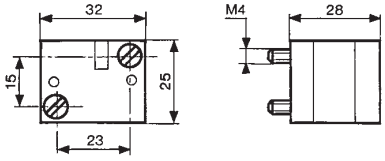
For the correct usage of sensors on a falling pressure, it is recommended that the practical cylinder load is limited to 60% of the theoretical force.

Evolution of pressure within a double-acting cylinder



Dimensions

81 504 025

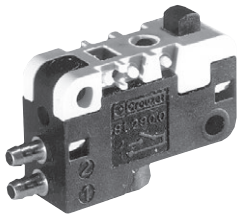


ATEX version products are available in the following catologues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet-control.com**

Low force position detector

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

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



Function		81 290 501	—
	NO		81 290 001
	NC	—	

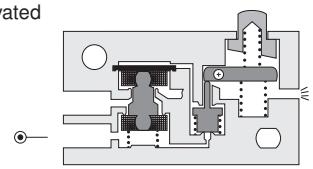
Symbol

Characteristics

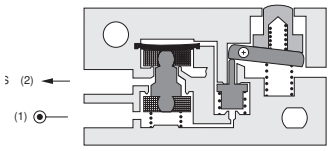
Orifice diameter		mm	2	2
Operating pressure		bar	3 → 8	3 → 8
Flow at 4 bars		Nl/min	100	100
Activation force at 6 bars		N	< 0,5	< 0,5
Permissible fluids (air / inert gas)			●	●
Max/min temperatures	of fluid	°C	-10 → +50	-10 → +50
	operating	°C	-10 → +60	-10 → +60
	storage	°C	-40 → +70	-40 → +70
Mechanical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

Principle of operation NC

Desactivated



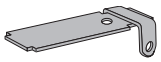
Activated



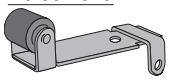
Operation accessories

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

161 A
flat R 25.4
70 507 524

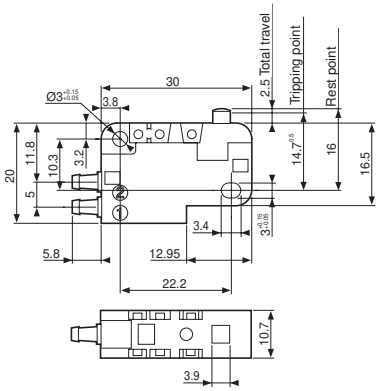


161 E
with roller R 24.1
70 507 529



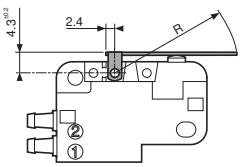
Dimensions

DIN 41635 Form A



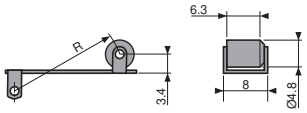
161 A

R 25.4 ±0,2



161 E

R 24.1 ±0,2

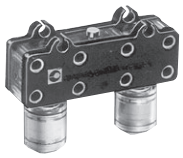


ATEX version products are available in the following catologues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet-control.com**

“Microvalve” series position detectors

› **100 % pneumatic**

81 280

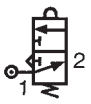


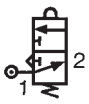
81 281

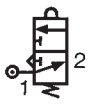
Version	NO	**81 280 010**	**81 281 010**	—
	NC	**81 280 510**	**81 281 510**	**81 283 510**
Features		Horizontal output	Vertical output	Rear connection by screw

Symbol

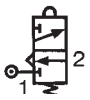
NO

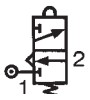


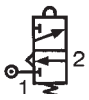




NC



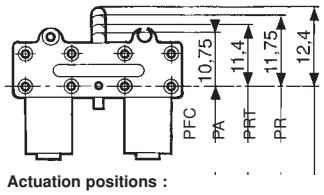




Characteristics

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

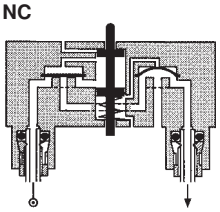
Principle of operation



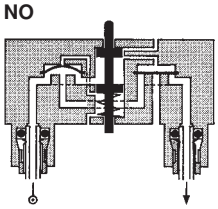
Actuation positions :

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

NC

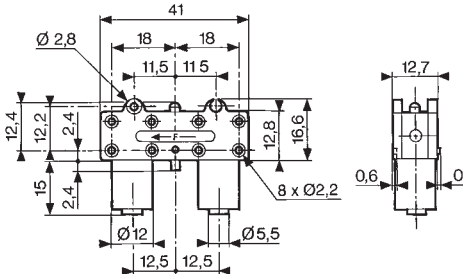


NO

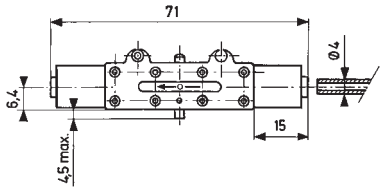


Dimensions

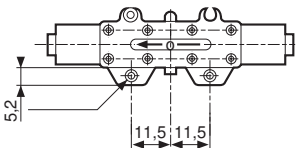
81 281 010 - 81 281 510



81 280 010 - 81 280 510

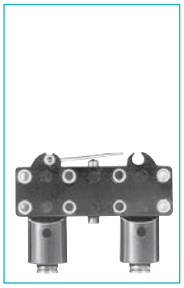
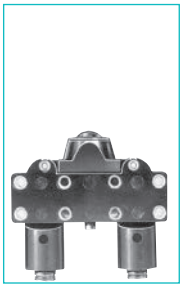
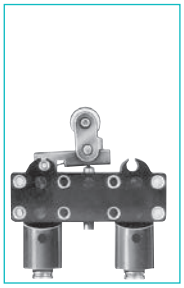


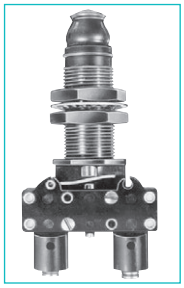
81 283 510



“Microvalve” series position detectors

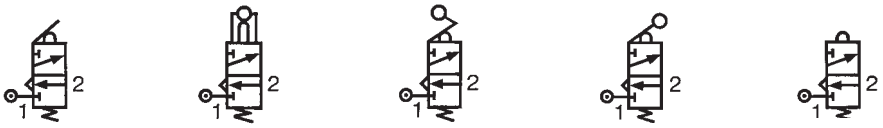
› **100 % pneumatic**



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

Symbol

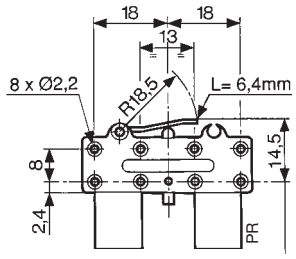


Characteristics

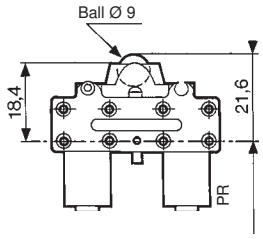
Operating pressure	bar	2 → 8	2 → 8	2 → 8	2 → 8	2 → 8
Orifice diameter	mm	2.7	2.7	2.7	2.7	2.7
Flow at 6 bars	Nl/min	200	200	200	200	200
Operating force at 6 bars	N	15	15	15	15	25
Effective travel	mm	1	1	1	1	1
Push-in connection for semi-rigid tubing (NFE 49100)	mm	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4
Operating temperature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

Dimensions

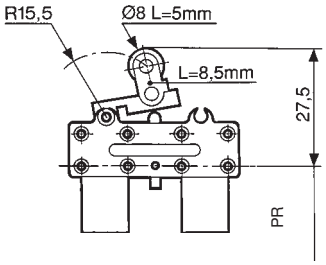
81 281 502



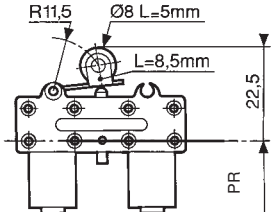
81 281 504



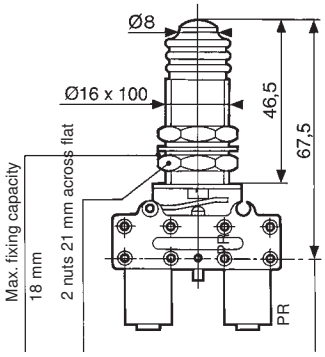
81 281 508



81 281 509



81 737 501



Actuation positions :

PR : Rest position