

Tiny Tubes



System 3-10
System C13

...perfectly switched!



Nass Controls LP

Nass Magnet GmbH

since 2011

nass magnet Hungária Kft.

Precision Controls Kft.

Solenoid Valve System 3-10

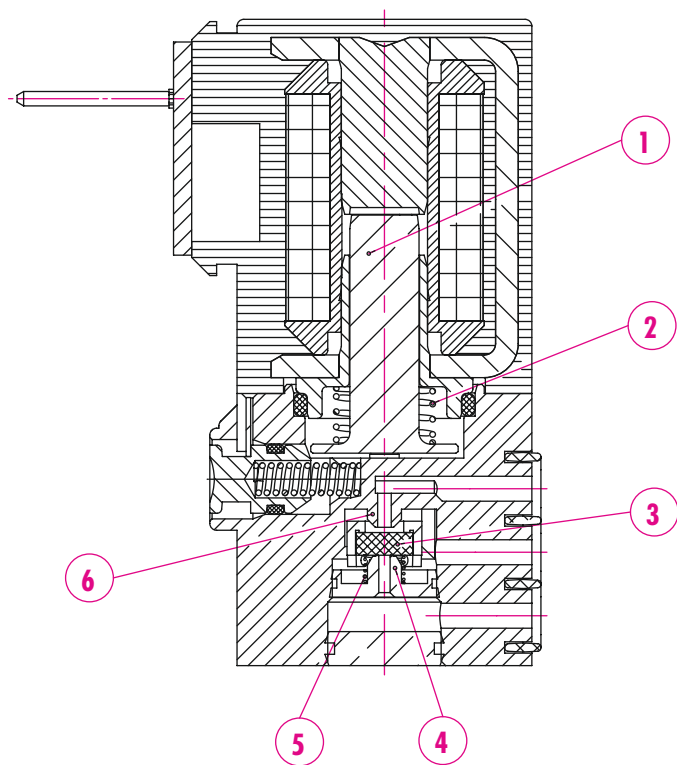
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Solenoid Valve System 3-10

Introduction
Application of System 3-10 Valves
Function



Introduction

The short name "System 3-10" identifies a solenoid valve. All valves of this type have got a plunger diameter of 3 mm, which has been ascertained and fixed for the size after thorough studies. The plunger diameter is an essential influencing factor;

its optimal selection is of decisive importance. After thorough studies and testing, "System 3-10" has been proven perfect for miniature pneumatic applications.

Application of System 3-10 Valves

The solenoids are especially used in pneumatics, mainly as 3/2 way valves. The switching functions "normally closed" and "normally open" are available. With these 3/2 way control valves nominal orifices of up to 0.7 mm can be reached at 8 bars. System 3-10 is mostly used as a pilot valve in pneumatics.

The solenoid valves were developed for the use with compressed air and other inert gases. If an application with other media is requested, Nass Magnet or its subsidiaries must be contacted in every individual case.

Function

The plunger (1) of System 3-10 is pressed downwards by the reset spring (2). The plunger itself, however, of these valve types is not equipped with any sealing elements. The plunger moves the actuator, which picks up the sealing element (3). In voltage-free state, the reset spring, via the plunger and the actuator, acts on the sealing element, which is pressed against the lower valve seat (4) to seal it. If the solenoid valve is put under voltage, the plunger is attracted.

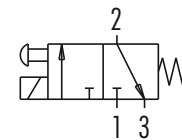
The actuator is relieved and moves upward being supported by the lower pressure spring (5). The sealing element releases the lower valve seat and seals the upper valve seat (6). Pressure can be put on the valve in different ways, depending on a 2/2 way valve or NO valve functions, or valve seats can be left off respectively. However, for these versions different spring designs are required.



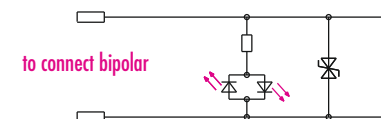
Solenoid Valve System 3-10

**3/2 Way Solenoid Valve
Normally Closed (NC)
Nominal Voltage 24V DC**

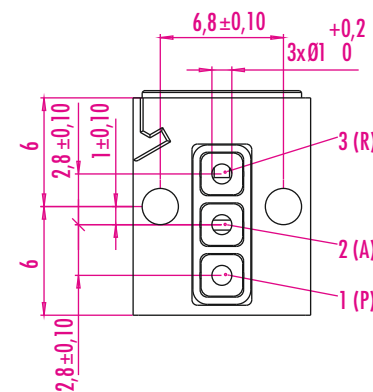
Pneumatic Diagram



Circuit Diagram



Pneumatic Interface ISO 15218



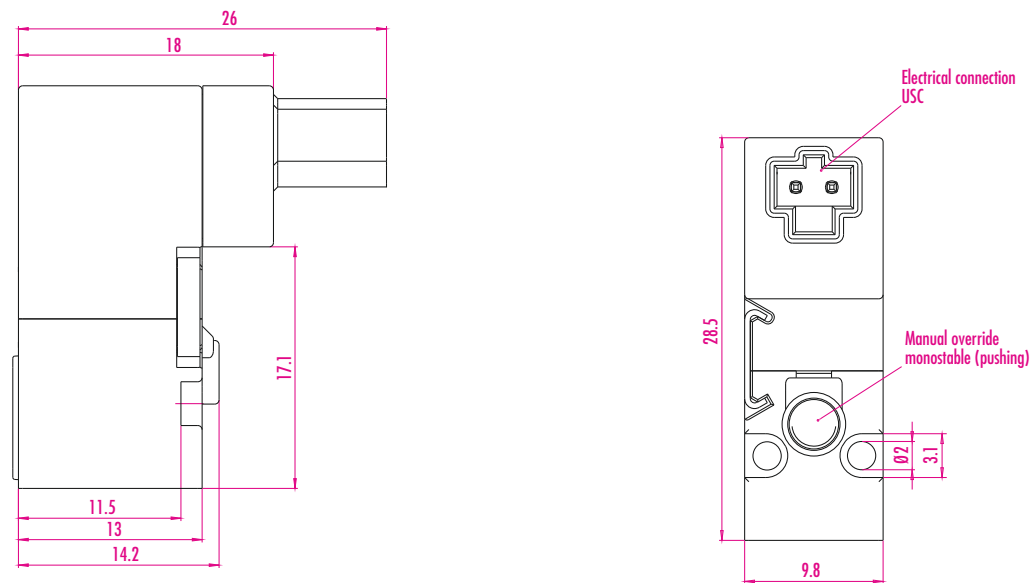
General Data

Voltage tolerance	-10% ... +10%
Ambient temperature	-10°C ... +50°C
Relative duty cycle	100%
Activation/deactivation period	5ms / 5ms
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 00 / IP 40 (see contact type)
High-voltage test according to DIN VDE 0580	500 V
Medium quality according to ISO 8573-1 when using NBR sealing elements	Compressed air class 3, 3, 3
Average lifetime of DC valves	100 million switching operations
Mounting position (preferably plunger vertical)	Any
Imprint (customer imprint for an addition charge)	Nass Magnet

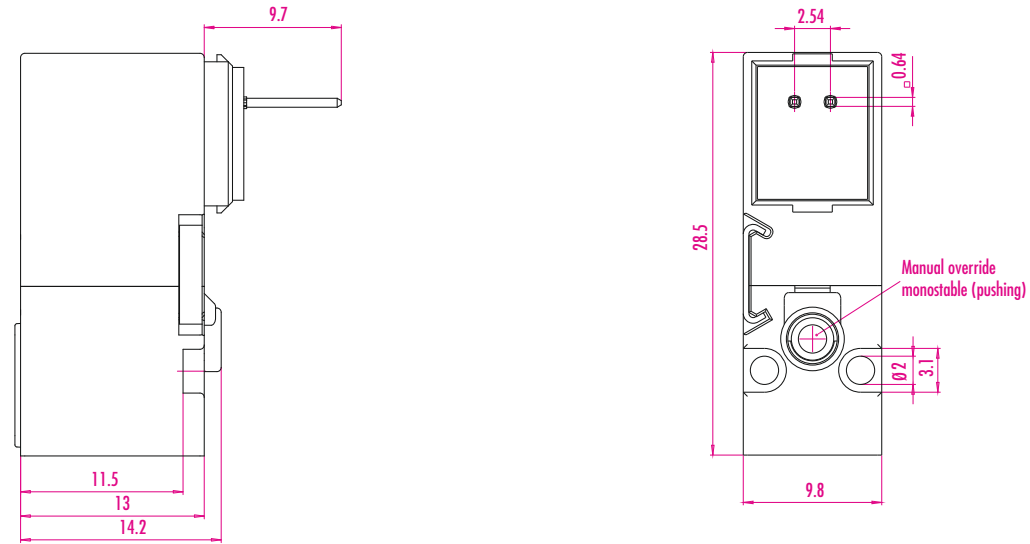
Technical Data / Standard Versions

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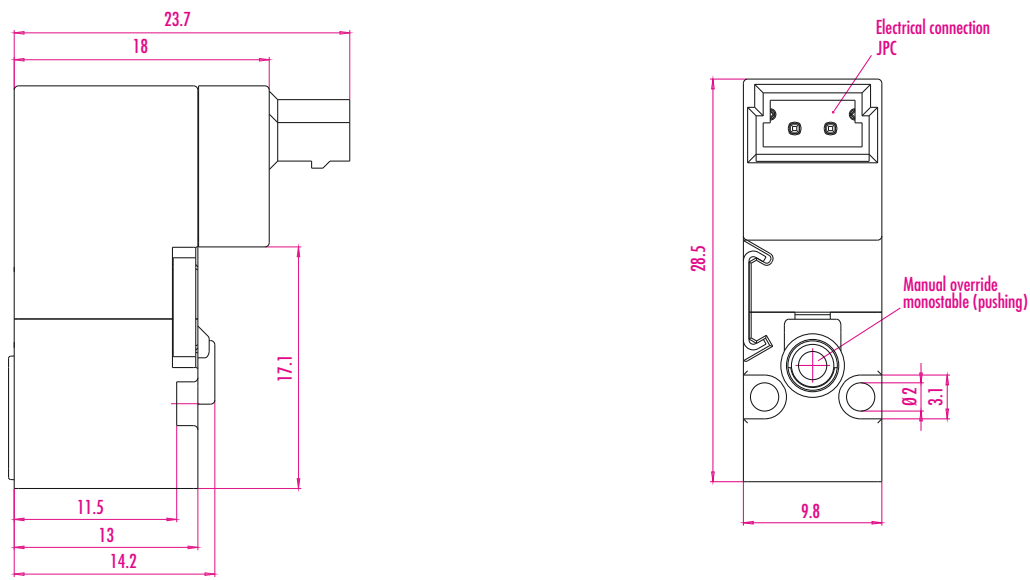
Electrical Connection: USC



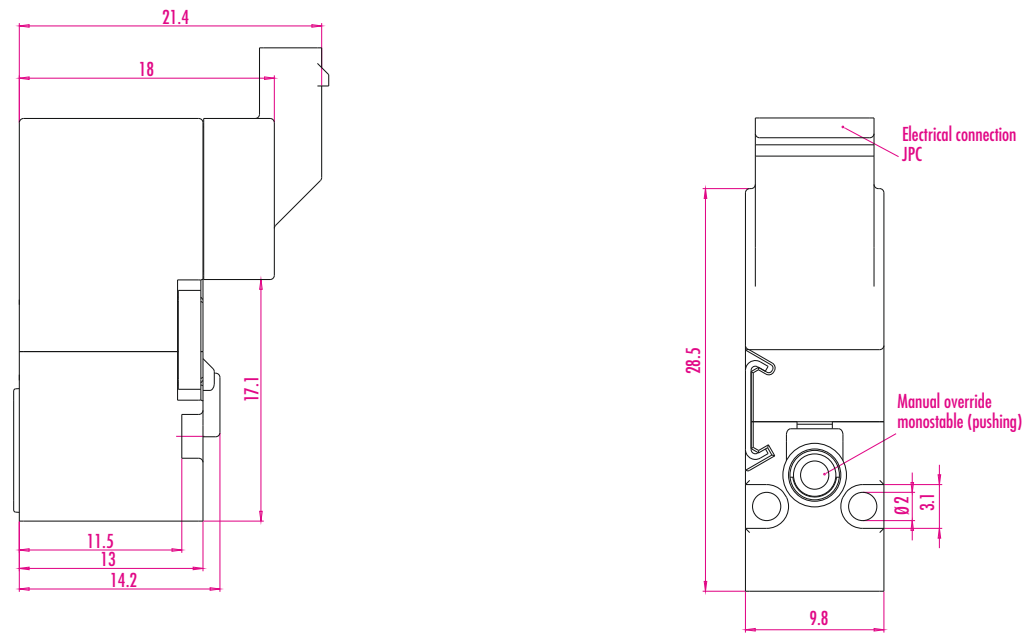
Electrical Connection: PIN



Electrical Connection: JPC



Electrical Connection: M Type

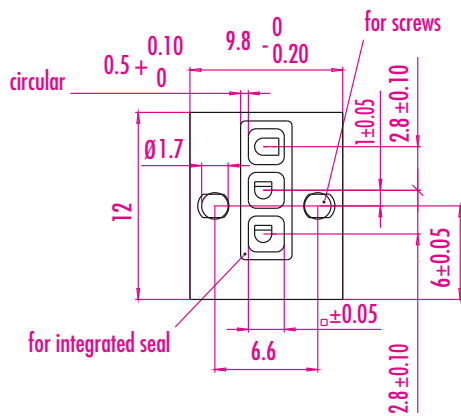




Solenoid Valve System 3-10

Special Remarks
Accessories

Pneumatic Interface



Special Remarks

All valves are designed in compliance with DIN VDE 0580. The alignment of the valves on manifolds is possible, but can lead to a restricted function. A general lifetime of the product cannot be specified, as it is decisively influenced by ambient conditions, the single application and the combination with other components. The function can only be

guaranteed in case of exclusive use of Nass Magnet products. Should there be deviating or additional operating conditions compared to the above mentioned conditions, special testing is necessary in order to verify the usability of the Nass Magnet products. Nass Magnet or one of its subsidiaries will be glad to offer assistance.

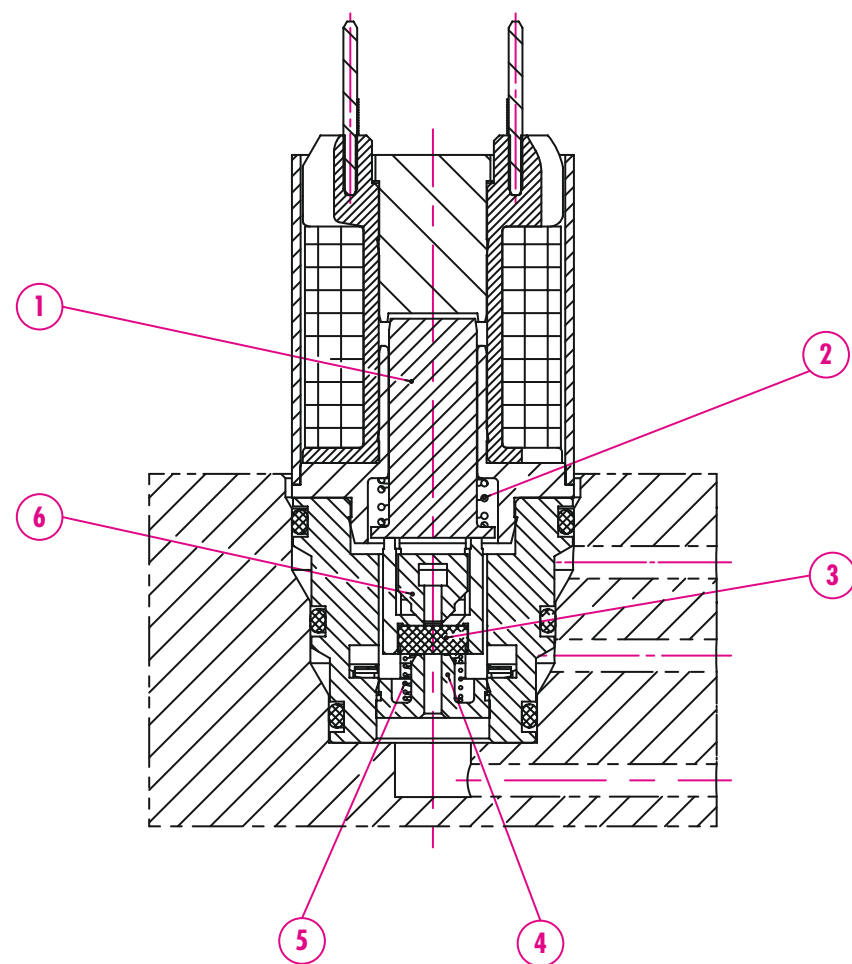
Accessories

Name / Type	Drawing No.	Part No.	Photo	Ill. with Dimensions	Explanations
Connector with flying leads USC type	6-80213-0002	686 0004			Flying leads length 100 mm
Connector with flying leads USC type	6-80213-0001	686 0003			Flying leads length 300 mm
Connector with flying leads JPC type	6-80113-0002	686 0002			Flying leads length 100 mm
Connector with flying leads JPC type	6-80113-0001	686 0001			Flying leads length 300 mm
Connector with flying leads JPC type	6-80113-0003	686 0005			Flying leads length 600 mm
Fastening screw*	NN 3001 004	260 7655			M 1.6x14mm
Interface incl. seal and screws	1426 00.0-10	260 8076			for adaptation of the pneumatic interface (consultation with Nass Magnet necessary)

* Two fastening screws are required per solenoid valve

Solenoid Valve Cartridge 13

Introduction
Application of Cartridge 13
Function



Introduction

The short name "C13" identifies a solenoid valve with an outside diameter of 13 mm. This outside diameter characterizes a possible size of 15 mm and thereby meets the

performance characteristics to be achieved in this size order. After thorough studies and testing, "Cartridge 13" has been proven perfect for miniature pneumatic applications.

Application of Cartridge 13

C 13 is used as a 2/2 or 3/2 way valve. The switching functions „normally closed“ and „normally open“ are available. In case of 3/2 way valves nominal orifices of up to 0.8 mm can be reached at 8 bars. Cartridge 13 is mainly used as a pilot valve in pneumatics.

The solenoid valves were developed for the use with compressed air and other inert gases. If an application with other media is requested, Nass Magnet or its subsidiaries must be contacted in every individual case.

Function

The plunger (1) of „Cartridge 13“ is pressed downwards by the reset spring (2). The plunger itself is not equipped with any sealing elements. The plunger moves the actuator, which picks up the sealing element (3). In a voltage-free state, the reset spring, via the plunger and the actuator, acts on the sealing element, which is pressed against the lower valve seat (4) to seal it. If the solenoid valve is energized, the plunger is attracted. The actuator is relieved and moves upward, supported by the lower pressure spring (5).

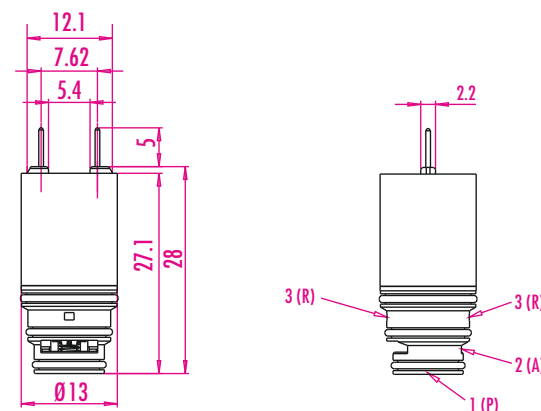
The sealing element releases the lower valve seat and seals the upper valve seat (6). Pressure can be put on the valve in different ways, depending on a 2/2 way valve or NO valve functions, or valve seats can be left off respectively. However, different spring designs are required for these versions. Please contact Nass Magnet or its subsidiaries for more information.



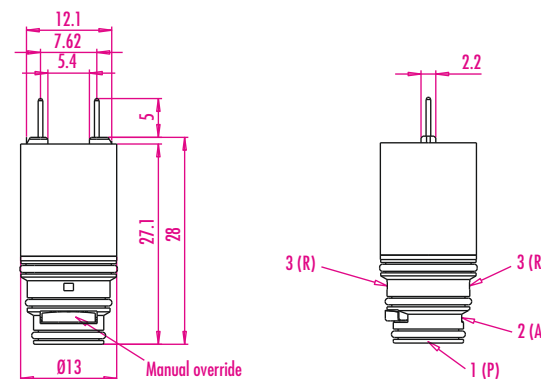
Solenoid Valve Cartridge 13

**3/2 Way Solenoid Valve
Normally Closed (NC)
Nominal Voltage 24V DC**

Without Manual Override



Monostable Manual Override



General Data

Voltage tolerance	-10% ... +10%
Ambient temperature	-10°C ... +50°C
Relative duty cycle	100%
Activation/deactivation period	5ms / 6ms
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 00
High-voltage test according to DIN VDE 0580	500 V
Quality of medium according to ISO 8573-1 when using NBR sealing elements	Compressed air class 3, 3, 3
Electrical pin distance	7.62 mm (3/10 inch)
Average lifetime of DC valves	100 million switching operations
Mounting position (preferably plunger in vertical direction)	Any
Marking	Nass Magnet's Part Number

Technical Data / Standard Versions

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Additional AC and DC version on request

Additional wiring: · LED · varistor · rectifier (for AC versions) · PWM = pulse width modulation · Reduction of performance is possible

Special Remarks

All valves are designed in compliance with DIN VDE 0580. A general lifetime of the products cannot be specified, as it is decisively influenced by ambient conditions, the single application and the combination with other components. The function can only be guaranteed in case of exclusive use of Nass Magnet products.

Should there be deviating or additional operating conditions compared to the above-mentioned conditions, special testing is necessary in order to verify the usability of the Nass Magnet products. Nass Magnet will be glad to advise you.

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