

820 Series



High Performance solenoid valve | 2/2 - 3/3
PNEUMATIC DIVISION

MATRIX
mechatronics

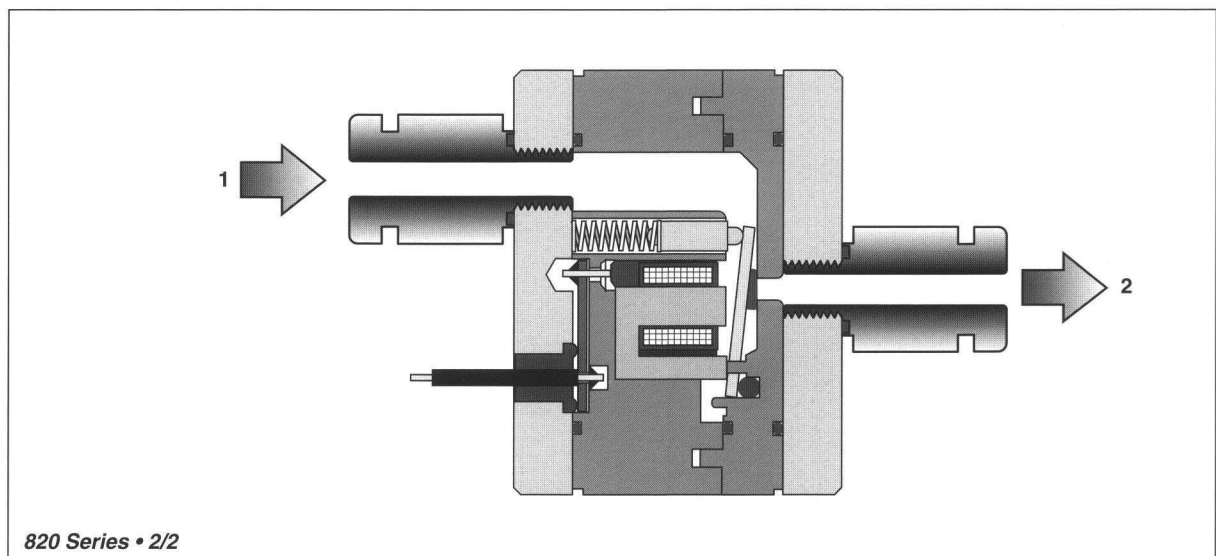
The Pneumatic Solenoid Valves 820 Series are NC 2/2 type.

The research about materials and new technological solutions allowed the realization of a shutter solenoid valve with an extremely simple operation principle and with avant-garde dynamic characteristics. The mass of the moving elements has been reduced to the minimum and every inner friction has been eliminated: in this way, we obtained response times of milliseconds and an operation life over 500 million cycles. Due to the possibility of controls of speed-up type, their dynamic characteristics are even more improved. Standard solenoid valves with 24 VDC control have a response time lower than 5 ms in opening and 2 ms in closing, with a maximum operation frequency of 200 Hz. On the contrary, solenoid valves with speed-up control have a response time lower than 1 ms, both in opening and in closing, with a maximum operation frequency of 500 Hz.

Besides high-speed characteristics, solenoid valves 820 Series offer flow rate values up to 180ℓ/minute (ANR), with feeding pressure from 0 to 8 bar.

Controlling the valve through either PWM (Pulse Width Modulation) or PFM (Pulse Frequency Modulation) technique, it is possible to vary the passing flow rate and to obtain, in this way, a solenoid valve, having a proportional flow rate.

820 Series is available both in-line assembly and sub-plate version, equipped with such accessories as multi-position manifolds or speed-up driver boards.



Advantages

- Compact dimension.
- High duct diameter and flow rate.
- Short response times.
- Insensitivity to frequency work and to vibrations.
- Low absorbed power.
- Precision, repetitiveness and flexibility.
- Long operating life.

Applications

- Process and precision instrumentation.
- Pressure and flow rate control devices.
- Positioning systems.
- Selection systems.
- Metering systems.
- Biomedical and measure sector.

Materials

- Body in PPS.
- Flanges in Al.
- Seals in NBR.

CONTROL:

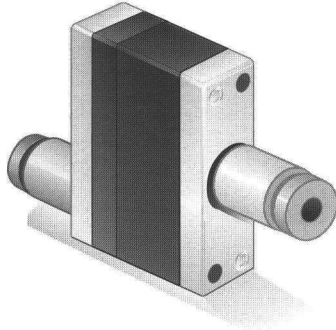
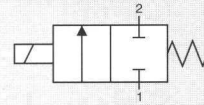
DIRECT

PFM

PWM



N. 1 NC



GENERAL CHARACTERISTICS

FLUID	Non-lubricated dry air, neutral gases(-10 + 50°C)	
FILTRATION RATING	Min 40 micron	
TEMPERATURE	- 10 + 50°C (Standard version)	
RESPONSE TIME IN OPENING	24 < 5 ms	XX / KK < 1 ms
RESPONSE TIME IN CLOSING	24 < 2 ms	XX / KK < 1 ms
MAXIMUM FREQUENCY	200 Hz	500 Hz
WEIGHT	25 g	
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles	
IP RATING	IP 62	

IDENTIFICATION CODE

	M	X	8	2	1	1	0	0	C	2	24
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● **OUTLETS**

1	1 Outlet
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● **FLOW RATE (at 6 bar)**

M	100 Nl/min
N	140 Nl/min (control tension XX KK)
O	180 Nl/min (control tension XX KK)

● **VERSION**

	Body ported
D	Manifold

● **No. ELECTRICAL CONTROLS**

1	1 Control
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● **PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
1	Integrated cables IP 62 L = 100 mm

● **FUNCTION**

C	NC
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● **TYPE**

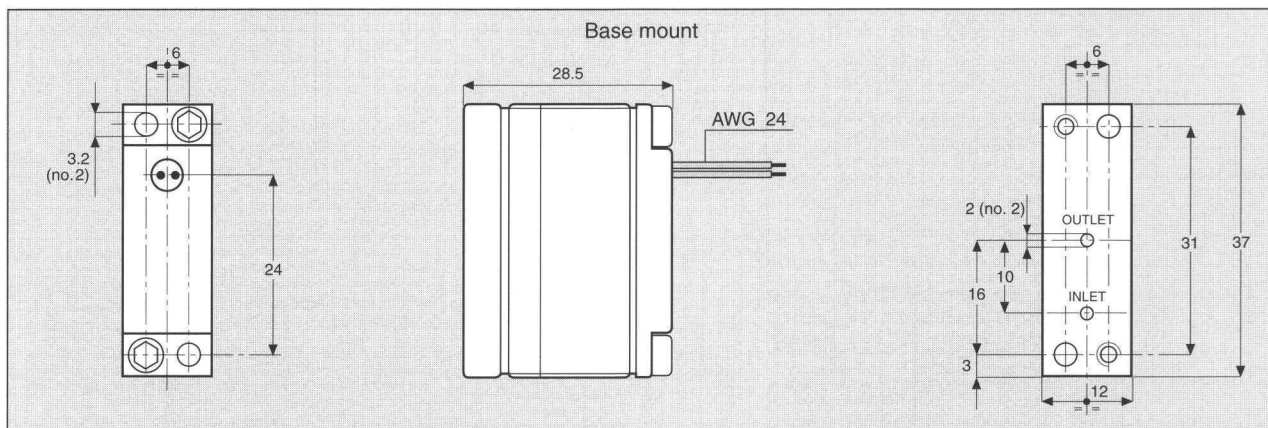
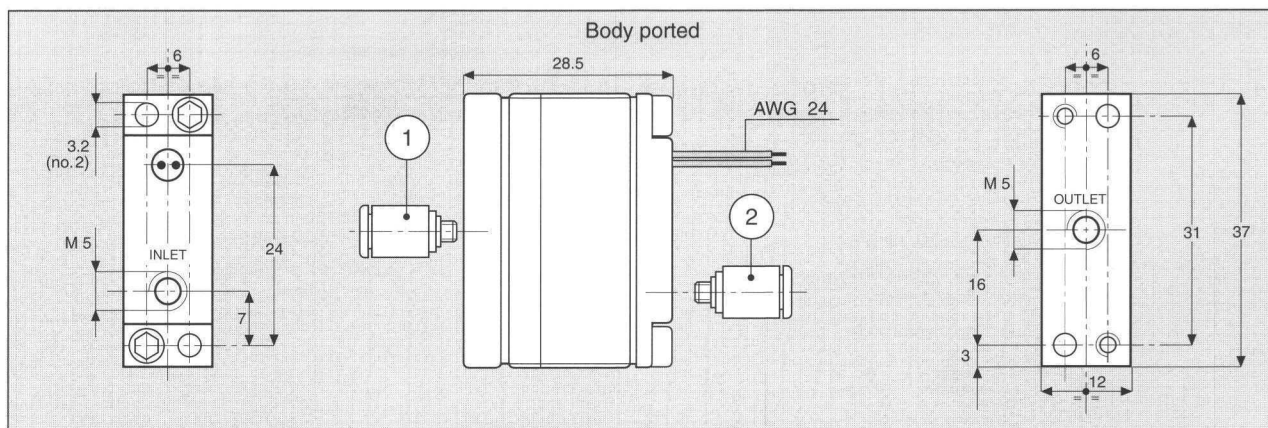
2	2/2
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● **CONTROL TENSION**

24	24 VDC ± 10 %	2.9 W
XX	Speed-up in current (24 VDC)	1.3 W
KK	Speed-up in tension (24 VDC)	0.8 W

● **OPERATING PRESSURE**

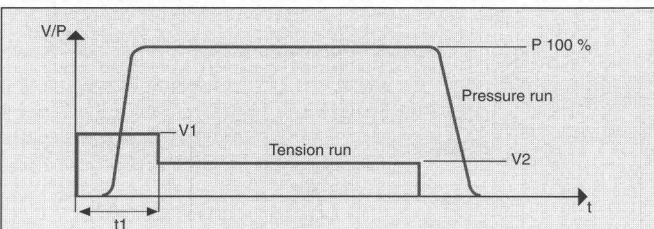
	RANGE	MODELS
0	2 - 8 bar	All
3	0 - 8 bar	M XX / KK
4	0 - 6 bar	All



ACCESSORIES		
Reference	Quantity	Description
1	1	PUSH-IN FITTING Ø 4/6
2	1	PUSH-IN FITTING Ø 4/6

NOTE: Inch size available

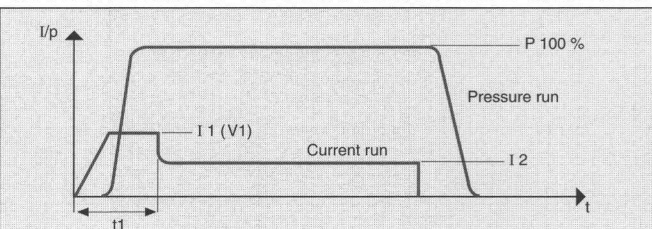
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

M	V 1 = 24 VDC	t 1 = 2.0 ms	V 2 = 5 VDC
N	V 1 = 24 VDC	t 1 = 2.0 ms	V 2 = 5 VDC
O	V 1 = 24 VDC	t 1 = 2.5 ms	V 2 = 5 VDC

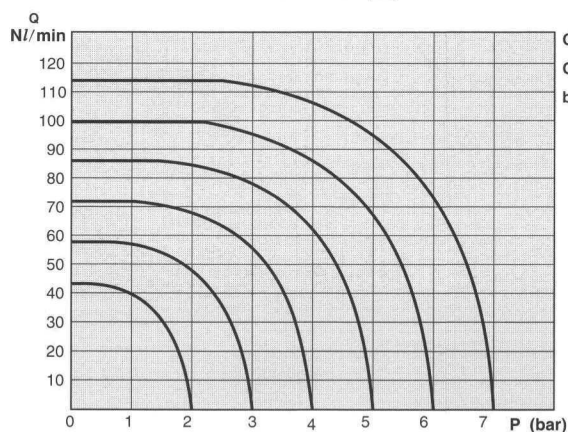
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



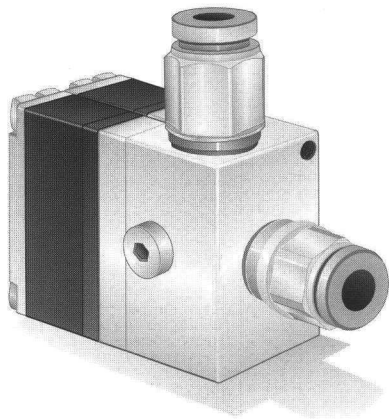
N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I 1 = 0.7 A	t 1 = 2 ms	I 2 = 0.3 A
N	I 1 = 0.8 A	t 1 = 2 ms	I 2 = 0.3 A
O	I 1 = 0.9 A	t 1 = 2 ms	I 2 = 0.3 A

FLOW RATE **M**

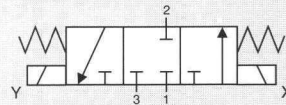


Qn = 73 NI/min
C = 15.7 NI/min bar
b = 0.433



CONTROL: DIRECT PFM PWM

N. 1 NC



GENERAL CHARACTERISTICS

FLUID	Non-lubricated dry air, neutral gases (-10 + 50°C)	
FILTRATION RATING	Min 40 micron	
TEMPERATURE	- 10 + 50°C (Standard version)	
RESPONSE TIME IN OPENING	24 < 6 ms	XX / KK < 3 ms
RESPONSE TIME IN CLOSING	24 < 2 ms	XX / KK < 1 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz
WEIGHT	130 g	
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycle	
IP RATING	IP 62	

IDENTIFICATION CODE

G	M	K	8	2	1	2	0	1	C	3	24
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● **OUTLETS**

1	1 Outlet
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● **FLOW RATE (at 6 bar)**

M	60 Nl/min
N	90 Nl/min (control tension XX / KK)
O	120 Nl/min (control tension XX / KK)

● **VERSION**

G	Body ported
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● **No. ELECTRICAL CONTROLS**

2	2 Controls
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● **PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
1	Integrated cables IP 62 L = 100 mm

● **FUNCTION**

C	NC
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● **TYPE**

3	3/3
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● **CONTROL TENSION**

24	24 VDC ± 10 %	1.9 W
XX	Speed-up in current (24 VDC)	1.3 W
KK	Speed-up in tension (24 VDC)	0.8 W

● **OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
3	0 - 8 bar	M XX / KK

ACCESSORIES

Manifold - 820 Series

Manifolds for multiple installing represent a fast and safe system of connection for all 820 Series models. Manifolds are available in patterns for 4 and 8 solenoid valves. They come in a kit with fastening screws, inlet push-in fittings, closure plug and sealing O-Rings.

How to order manifolds - Available patterns

Pattern	Kit code	Y (mm)	Z (mm)
no. 4 Solenoid valves	820.041 B	70	60
no. 8 Solenoid valves	820.042 C	120	110

4 position manifold - Assembly scheme

