

## 820 Series



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

**MATRIX**  
mechatronics

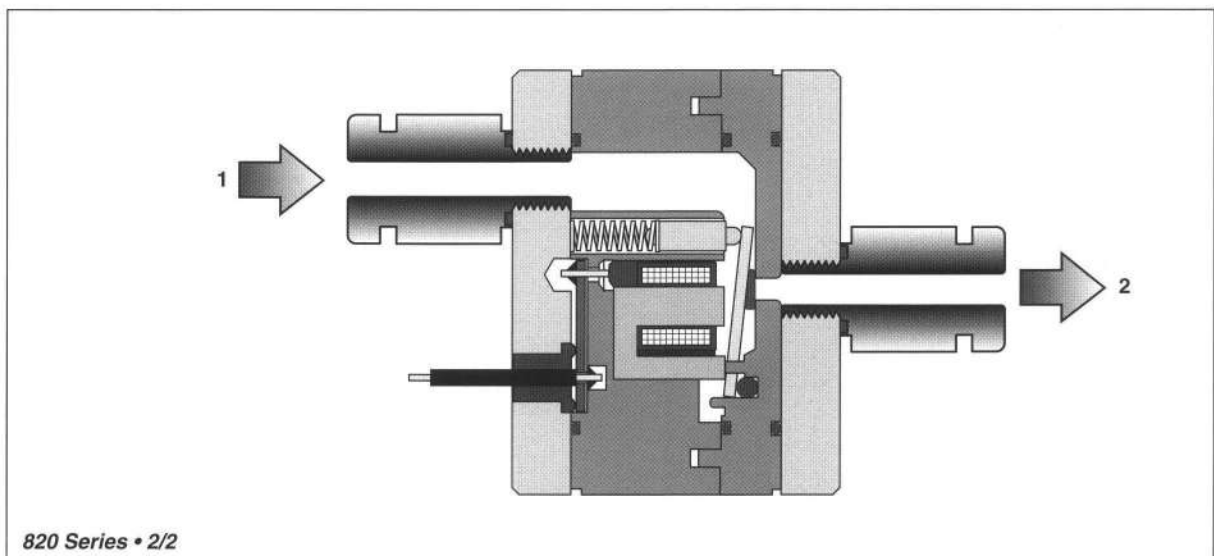
The Pneumatic Solenoid Valves 820 Series are NC 2/2 type.

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

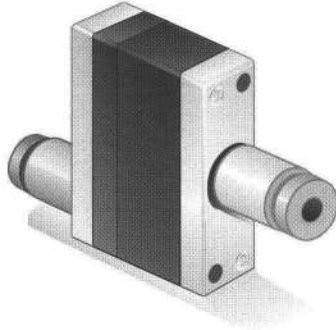
- Compact dimension.
- High duct diameter and flow rate.
- Short response times.
- Insensitivity to frequency work and to vibrations.
- Low absorbed power.
- Precision, repetitiveness and flexibility.
- Long operating life.

## Applications

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

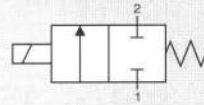
## Materials

- 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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**• FLOW RATE (at 6 bar)**

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

**• OUTLETS**

1	1 Outlet
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**• FUNCTION**

C	NC
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**• TYPE**

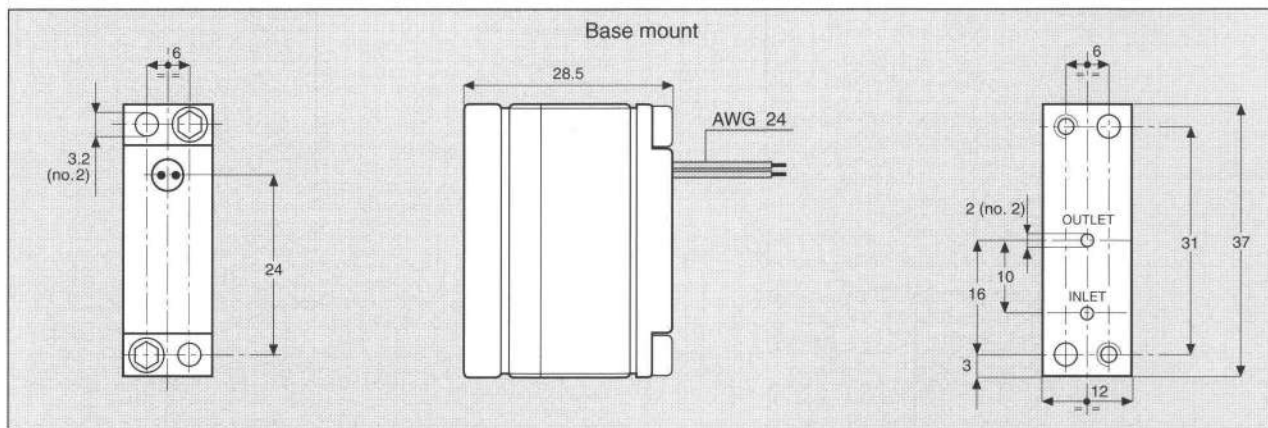
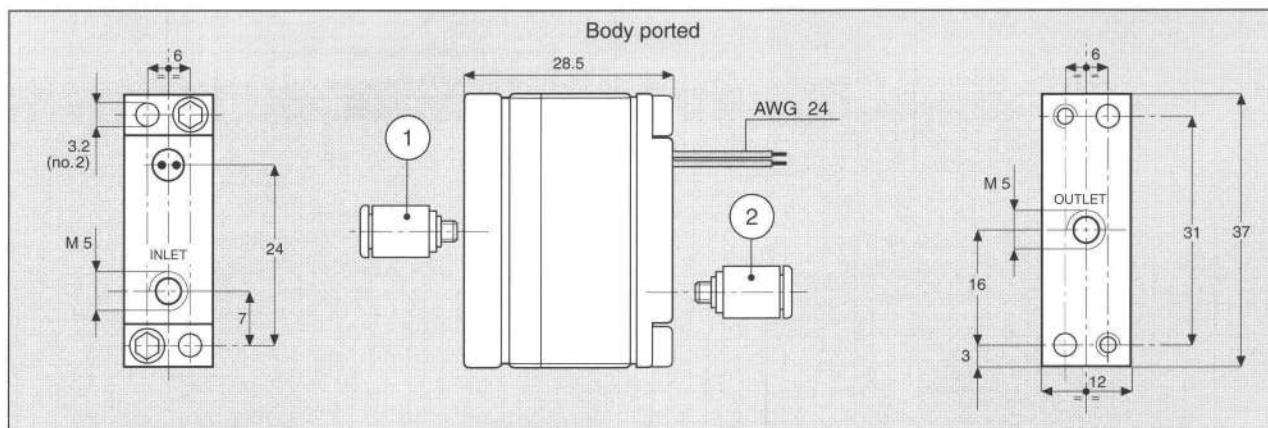
2	2/2
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**• CONTROL TENSION**

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**

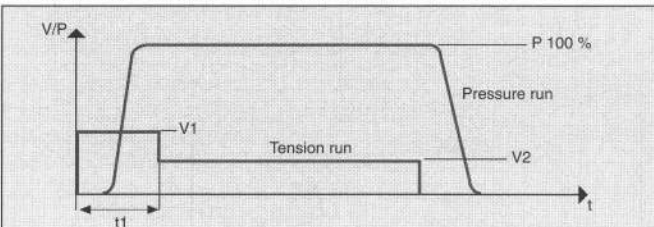
	RANGE	MODELS
0	2 - 8 bar	All
3	0 - 8 bar	M ..... XX / KK
4	0 - 6 bar	All



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

NOTE: Inch size available

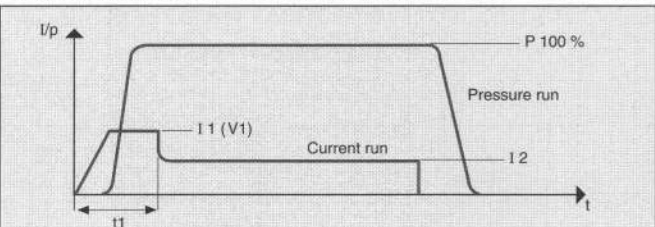
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

M	V1 = 24 VDC	t1 = 2.0 ms	V2 = 5 VDC
N	V1 = 24 VDC	t1 = 2.0 ms	V2 = 5 VDC
O	V1 = 24 VDC	t1 = 2.5 ms	V2 = 5 VDC

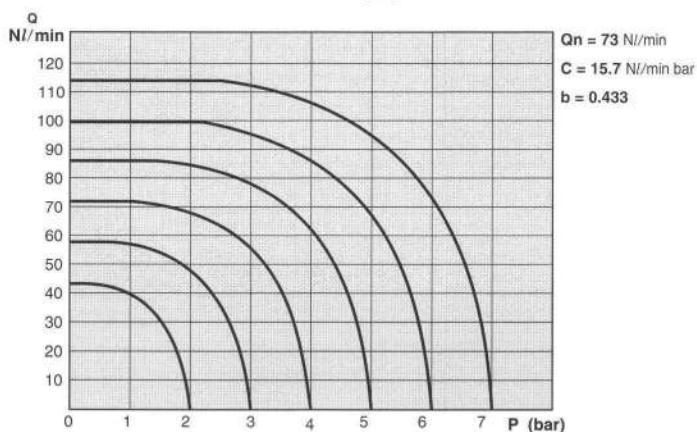
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



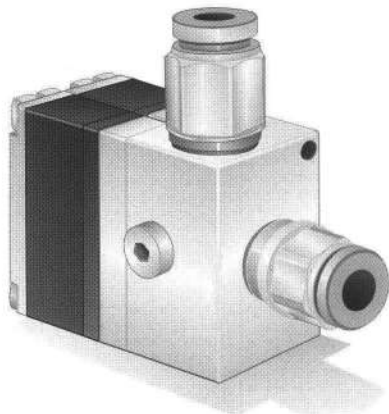
N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I1 = 0.7 A	t1 = 2 ms	I2 = 0.3 A
N	I1 = 0.8 A	t1 = 2 ms	I2 = 0.3 A
O	I1 = 0.9 A	t1 = 2 ms	I2 = 0.3 A

FLOW RATE **M**

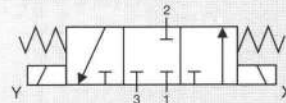






CONTROL:  DIRECT  PFM  PWM

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 NI/min
N	90 NI/min (control tension XX / KK)
O	120 NI/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**

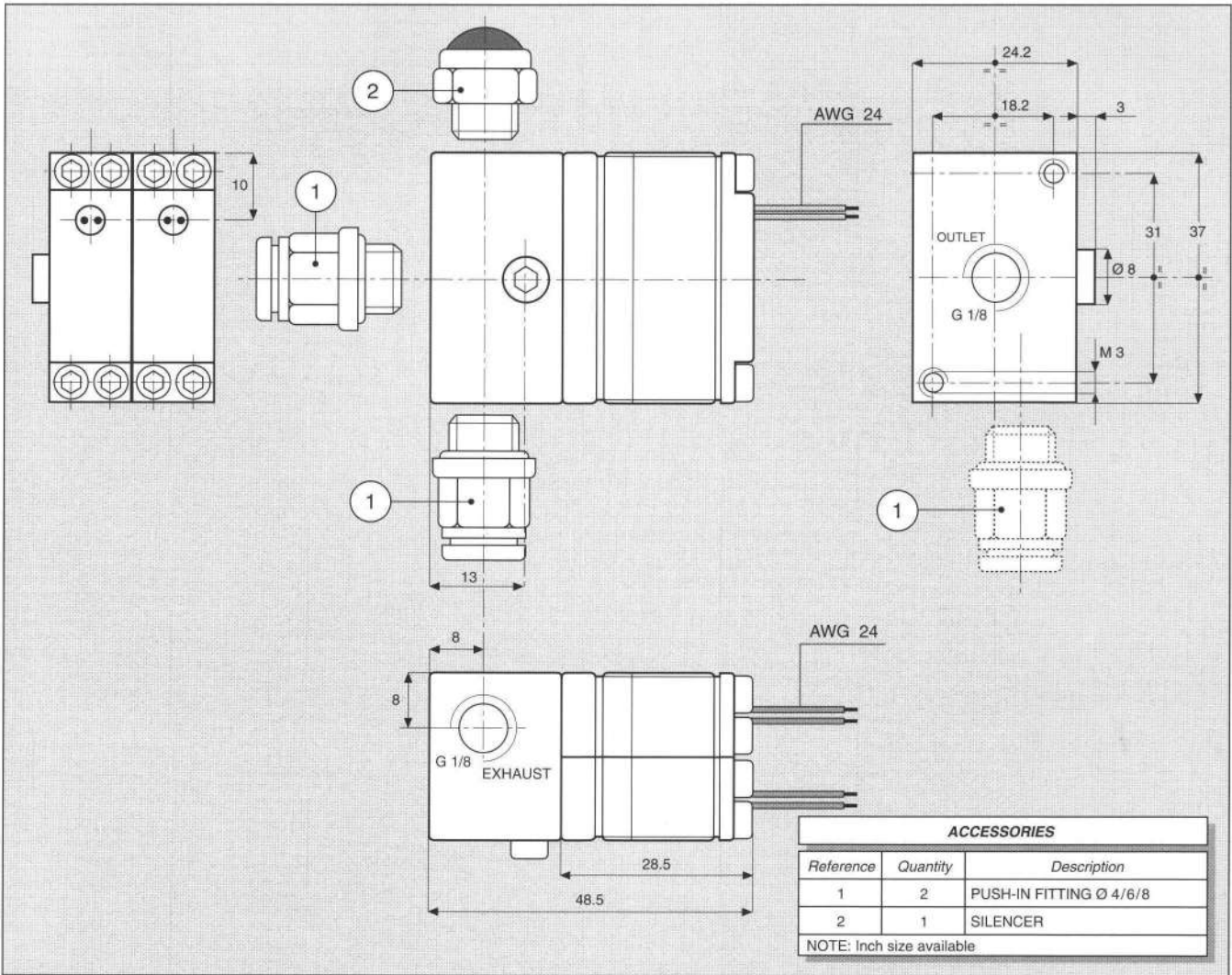
3	3/3
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● **CONTROL TENSION**

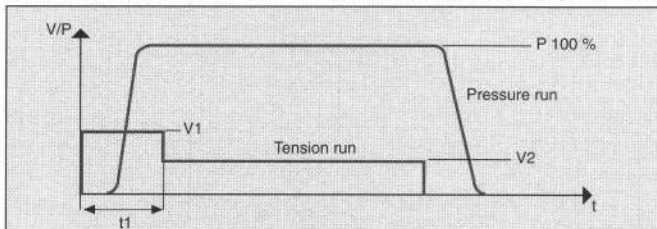
24	24 VDC ± 10%	1.9 W
XX	Speed-up in current (24 VDC)	1.3 W
KK	Speed-up in tension (24 VDC)	0.8 W

● **OPERATING PRESSURE**

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



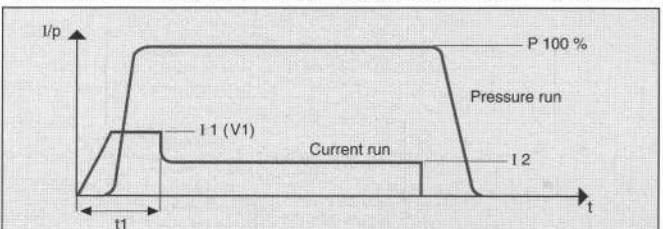
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

	V1 = 24 VDC	t1 = 2.0 ms	V2 = 5 VDC
M	V1 = 24 VDC	t1 = 2.5 ms	V2 = 5 VDC
N	V1 = 24 VDC	t1 = 3.0 ms	V2 = 5 VDC
O	V1 = 24 VDC	t1 = 3.0 ms	V2 = 5 VDC

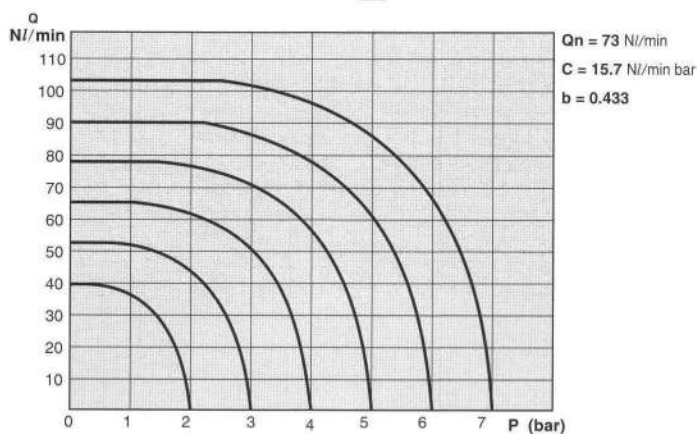
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



N.B. XX MODELS ARE CONTROLLED IN CURRENT

	I1 = 0.7 A	t1 = 2 ms	I2 = 0.3 A
M	I1 = 0.8 A <td>t1 = 2 ms</td> <td>I2 = 0.3 A</td>	t1 = 2 ms	I2 = 0.3 A
N	I1 = 0.9 A <td>t1 = 2 ms</td> <td>I2 = 0.3 A</td>	t1 = 2 ms	I2 = 0.3 A
O	I1 = 0.9 A <td>t1 = 2 ms</td> <td>I2 = 0.3 A</td>	t1 = 2 ms	I2 = 0.3 A

FLOW RATE N



# 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

