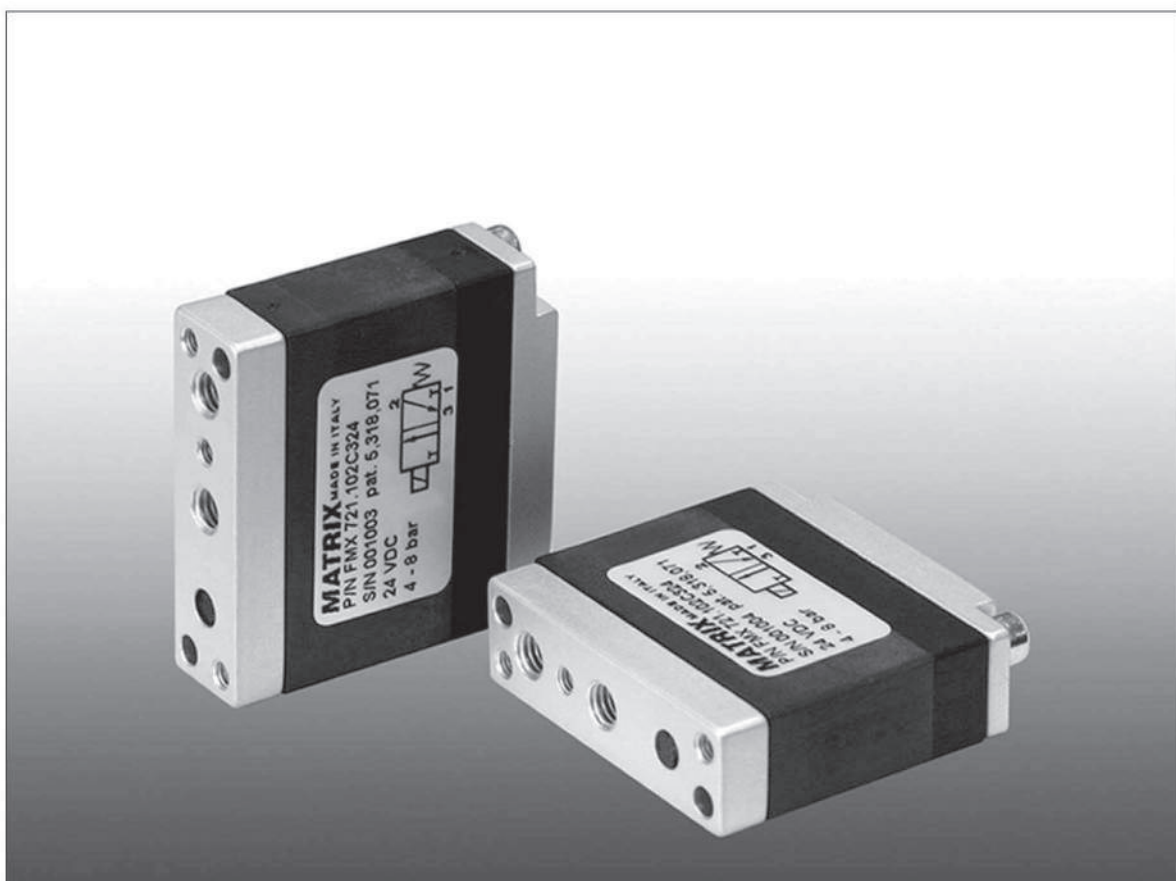


# 720 Series



**Compact solenoid valve | 2/2-3/2 NC-NO**  
PNEUMATIC DIVISION

**MATRIX**  
mechatronics

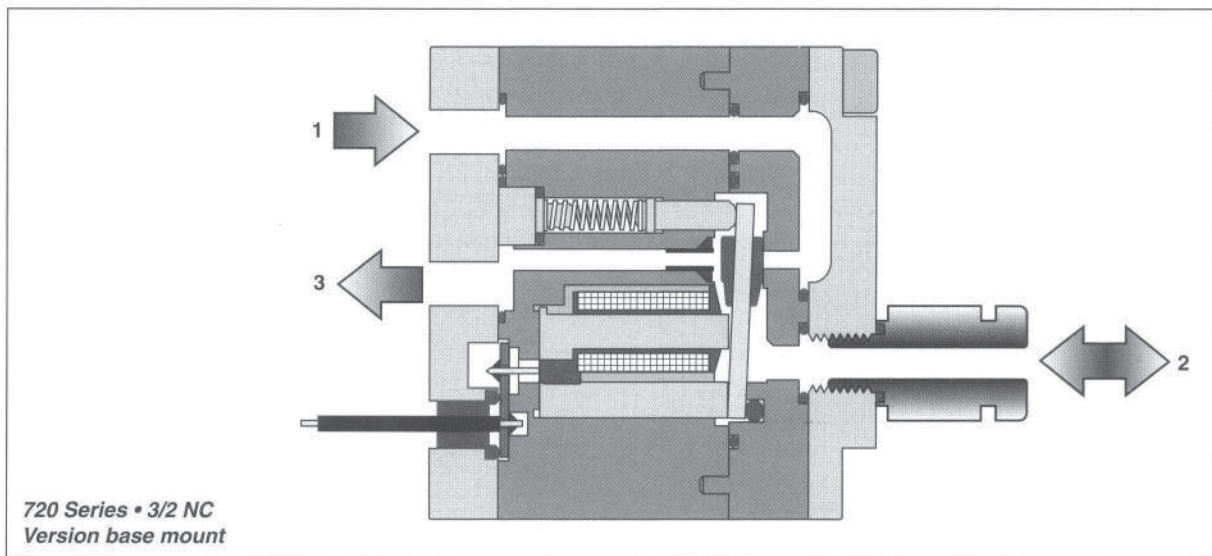
# SOLENOID VALVES 720 SERIES • 2/2 • 3/2

Pneumatic solenoid valves of 720 Series are available in both NC and NO version. They include all innovations, which are present in Matrix solenoid valves, both in materials and in operating principles. They couple simplicity and reliability with high dynamic performance. Response times are of milliseconds range, while their operating life is over 500 million cycles. The Series comprises Vacuum versions designed for uses with vacuum technique.

Due to the facility to be speed-up controlled, dynamic characteristics become even more improved: standard solenoid valves equipped with 24 VDC control present response times lower than 5 ms in opening and 2 ms in closing, with a maximum operation frequency 200 Hz. On the contrary, solenoid valves equipped with speed-up control present a response time both in opening and closing lower than 2 ms, with a maximum operation frequency 300 Hz.

Besides high-speed characteristics, solenoid valves 720 Series offer flow rate value to 100 l/minute (ANR), with supply pressure from 0 to 8 bar.

720 Series is available both in line assembly version and on sub-plate and is equipped with a range of accessories such as multi-position manifolds and 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.

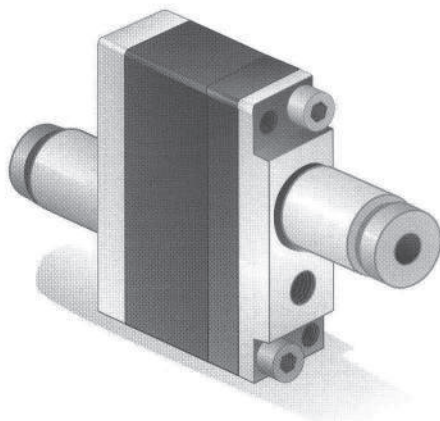
## Applications

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

## Materials

- Body in PPS.
- Flanges in Al.
- Seals in NBR (shutters in HNBR on request).





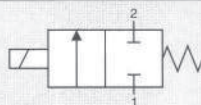
CONTROL:

DIRECT

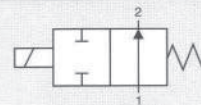
PFM

PWM

N. 1 NC



N. 1 NO



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	35 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 62		

IDENTIFICATION CODE

	H	X	7	2	1	1	0	2	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

● **OUTLETS**

1	1 Outlet
---	----------

● **FLOW RATE** (at 6 bar)

H	50 NI / min
B	80 NI / min
M	100 NI / min (control tension JJ XX KK)

● **VERSION**

	Body ported
H	Body ported - HNBR Shutters
F	Manifold
J	Manifold - HNBR Shutters

● **No. ELECTRICAL CONTROLS**

1	1 Control
---	-----------

● **PORT CONNECTION**

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

● **FUNCTION**

A	NO
C	NC

● **TYPE**

2	2/2
---	-----

● **CONTROL TENSION**

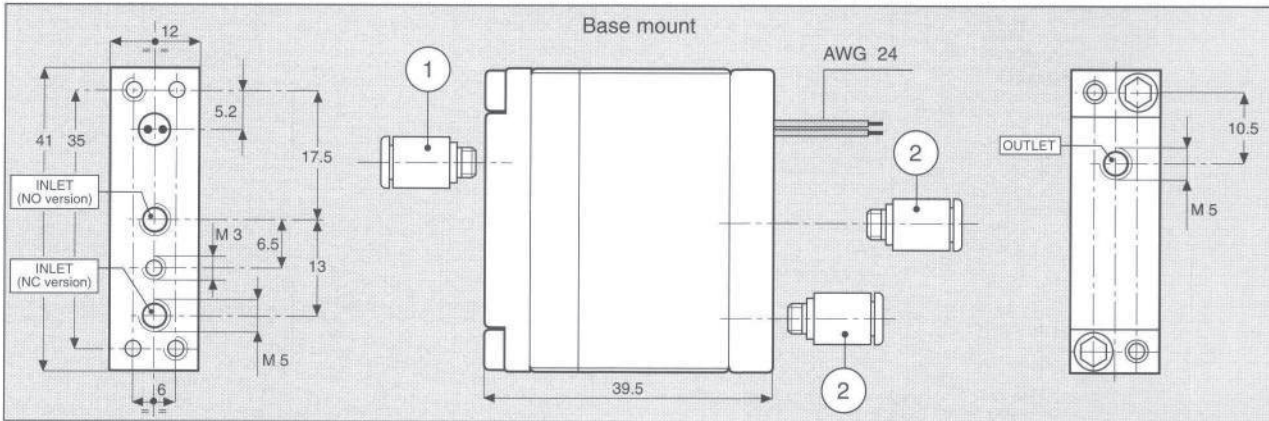
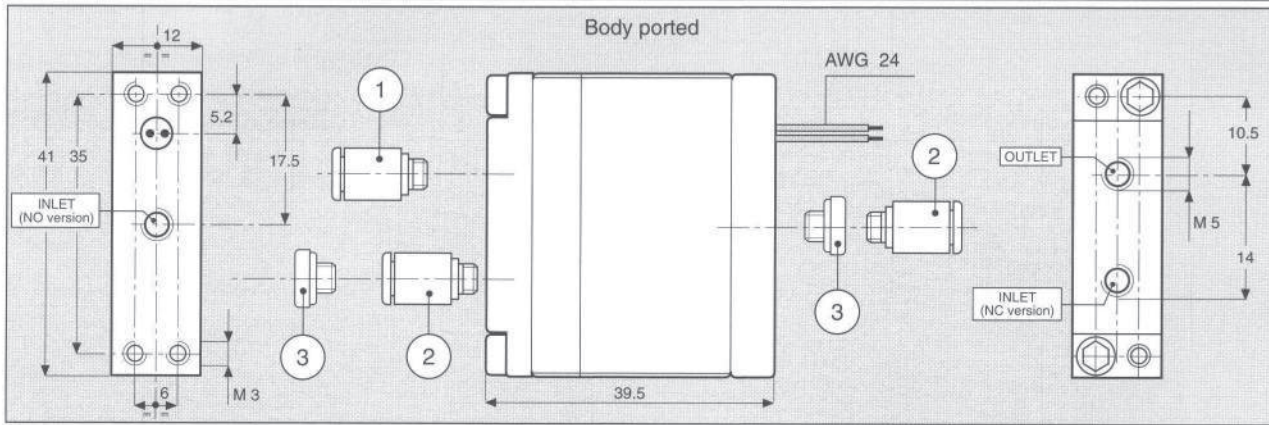
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

● **OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All

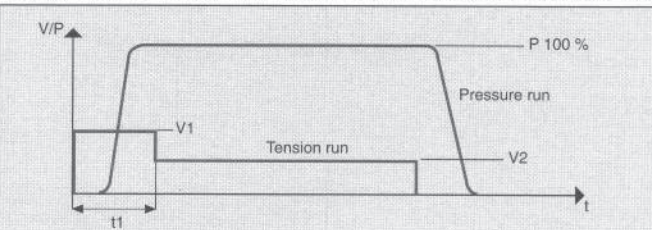




ACCESSORIES		
Reference	Quantity	Description
1	1	PUSH-IN FITTING Ø 4/6
2	1	PUSH-IN FITTING Ø 4/6
3	1	PLUG

NOTE: Inch size available

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



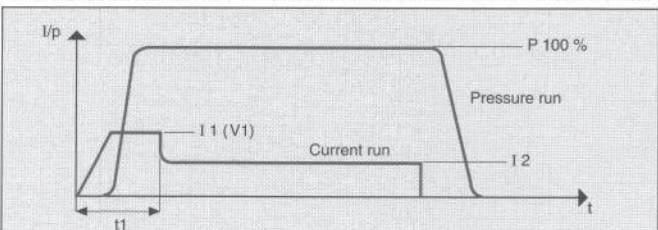
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 ms

V2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



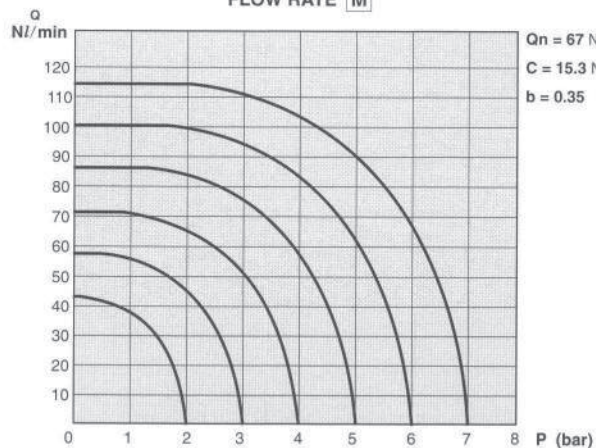
N.B. XX MODELS ARE CONTROLLED IN CURRENT

I1 = 0.7 A

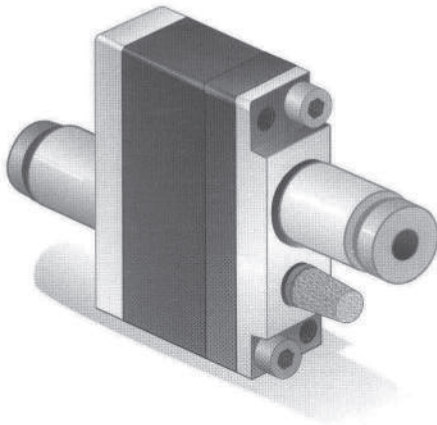
t1 = 2 ms

I2 = 0.3 A

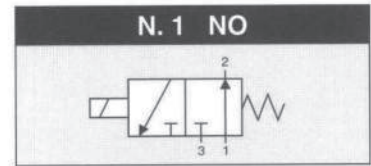
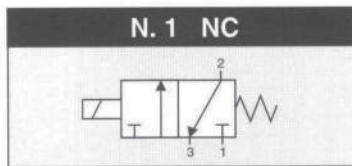
FLOW RATE  $\bar{M}$







CONTROL: **DIRECT**



**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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	35 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 62		

**IDENTIFICATION CODE**

	<b>H</b>	<b>X</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>C</b>	<b>3</b>	<b>24</b>
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**• FLOW RATE (at 6 bar)**

<b>H</b>	50 Nl / min
<b>B</b>	80 Nl / min
<b>M</b>	100 Nl / min (control tension <b>JJ</b> <b>XX</b> <b>KK</b> )

**• VERSION**

	Body ported
<b>H</b>	Body ported - HNBR Shutters
<b>F</b>	Manifold
<b>J</b>	Manifold - HNBR Shutters

**• No. ELECTRICAL CONTROLS**

<b>1</b>	1 Control
----------	-----------

**• PORT CONNECTION**

<b>0</b>	Integrated cables IP 62 L = 500 mm
<b>1</b>	Integrated cables IP 62 L = 100 mm

**• OUTLETS**

<b>1</b>	1 Outlet
----------	----------

**• FUNCTION**

<b>A</b>	NO
<b>C</b>	NC

**• TYPE**

<b>3</b>	3/2
----------	-----

**• CONTROL TENSION**

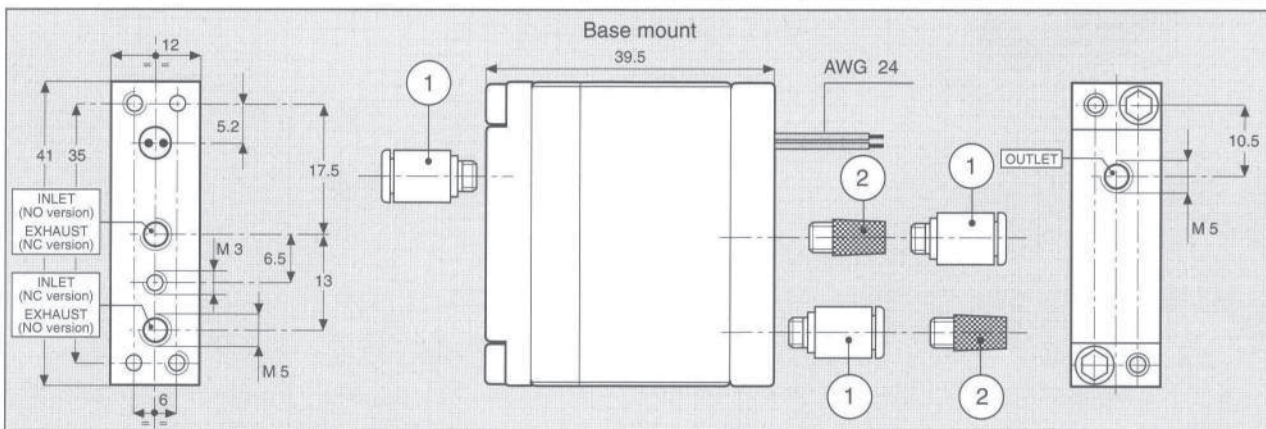
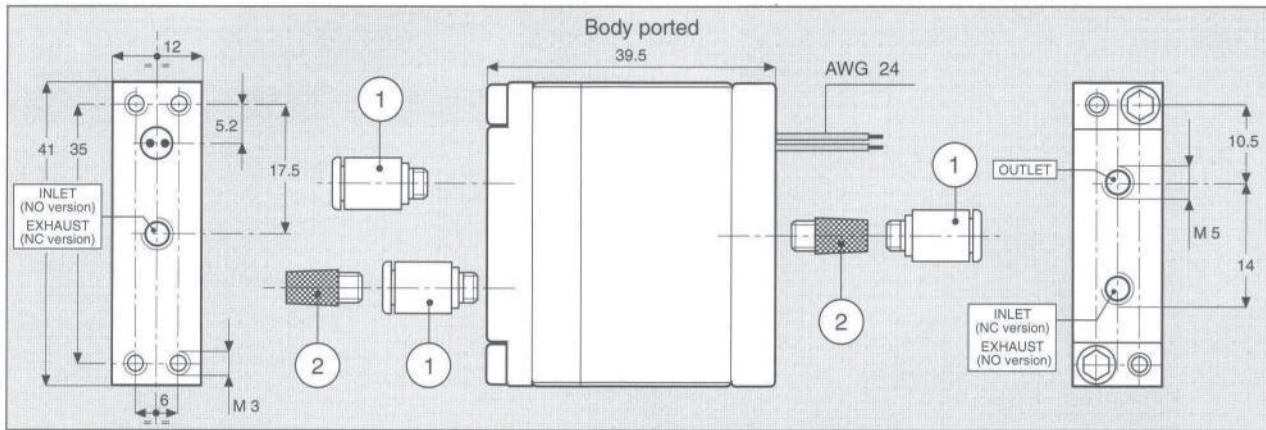
<b>12</b>	12 VDC ± 10 %	ED 100 %	1.4 W
<b>24</b>	24 VDC ± 10 %	ED 100 %	1.2 W
<b>JJ</b>	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
<b>XX</b>	Speed-up in current	ED 100 % <sup>(1)</sup>	—
<b>KK</b>	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(<sup>1</sup>) Only with Electronic Driver Boards PRB or UDB

**• OPERATING PRESSURE**

	RANGE	MODELS
<b>1</b>	0 - 4 bar	All
<b>2</b>	4 - 8 bar	All
<b>3</b>	0 - 8 bar	.... <b>XX</b> / <b>KK</b>
<b>8</b>	2 - 6 bar	All

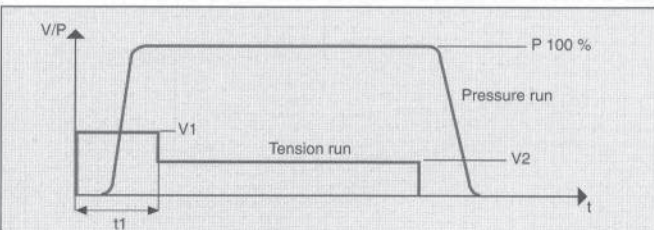




ACCESSORIES		
Reference	Quantity	Description
1	2	PUSH-IN FITTING Ø 4/6
2	1	SILENCER

NOTE: Inch size available

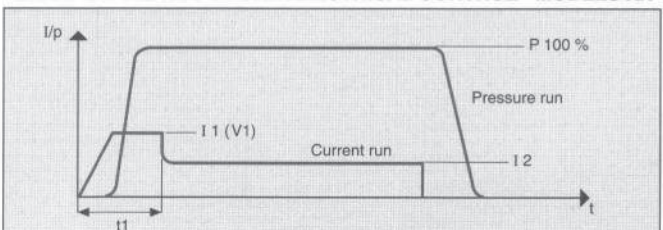
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC      t1 = 2 ms      V2 = 5 VDC

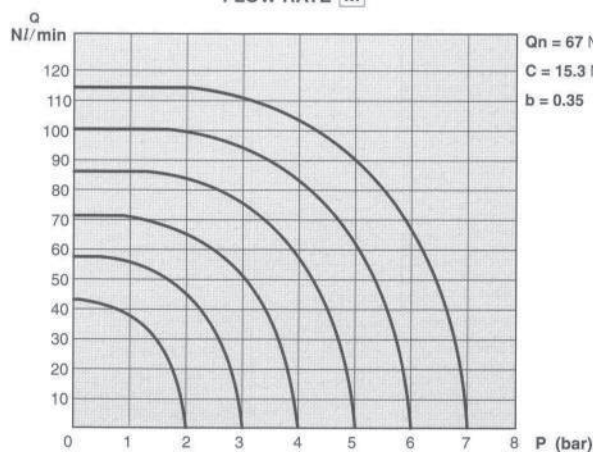
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



N.B. XX MODELS ARE CONTROLLED IN CURRENT

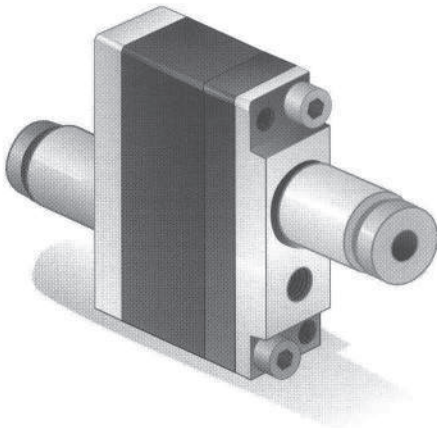
I1 = 0.7 A      t1 = 2 ms      I2 = 0.3 A

FLOW RATE  $\bar{M}$

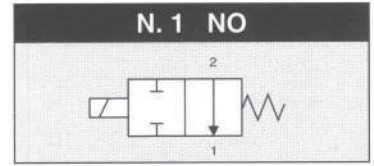
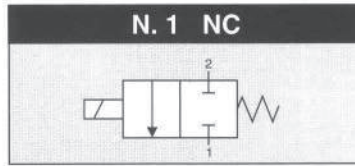


Qn = 67 NI/min  
C = 15.3 NI/min bar  
b = 0.35





CONTROL:  DIRECT  PFM  PWM



**GENERAL CHARACTERISTIC**

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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	35 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 62		

**IDENTIFICATION CODE**

	H	X	7	2	1	1	0	V	A	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**• ORIFICE**

H	Ø eq = 0.9 mm
B	Ø eq = 1.3 mm
M	Ø eq = 1.5 mm (control tension JJ   XX   KK)

**• VERSION**

	Body ported
H	Body ported - HNBR Shutters
F	Manifold
J	Manifold - HNBR Shutters

**• No. ELECTRICAL CONTROLS**

1	1 Control
---	-----------

**• PORT CONNECTION**

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

**• OUTLETS**

1	1 Outlet
---	----------

**• FUNCTION**

A	NO
C	NC

**• TYPE**

2	2/2
---	-----

**• CONTROL TENSION**

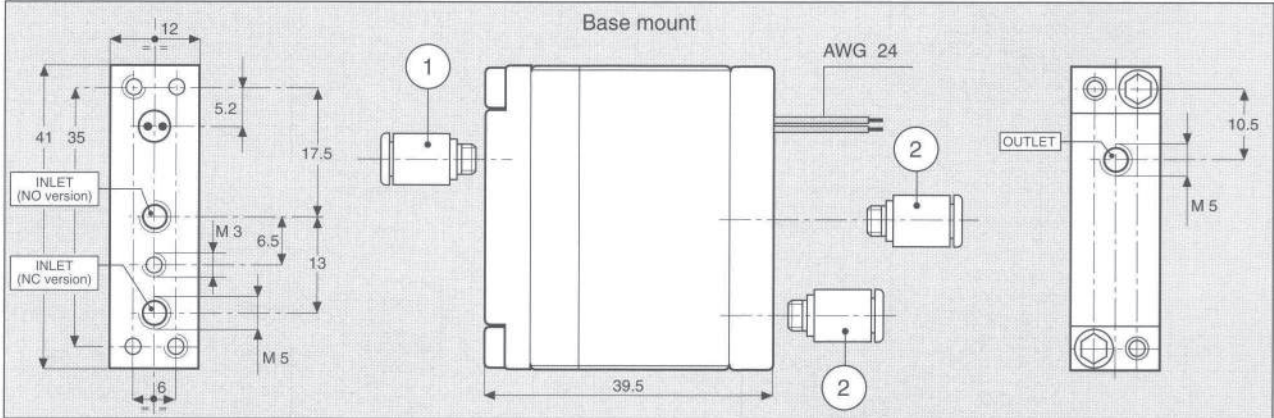
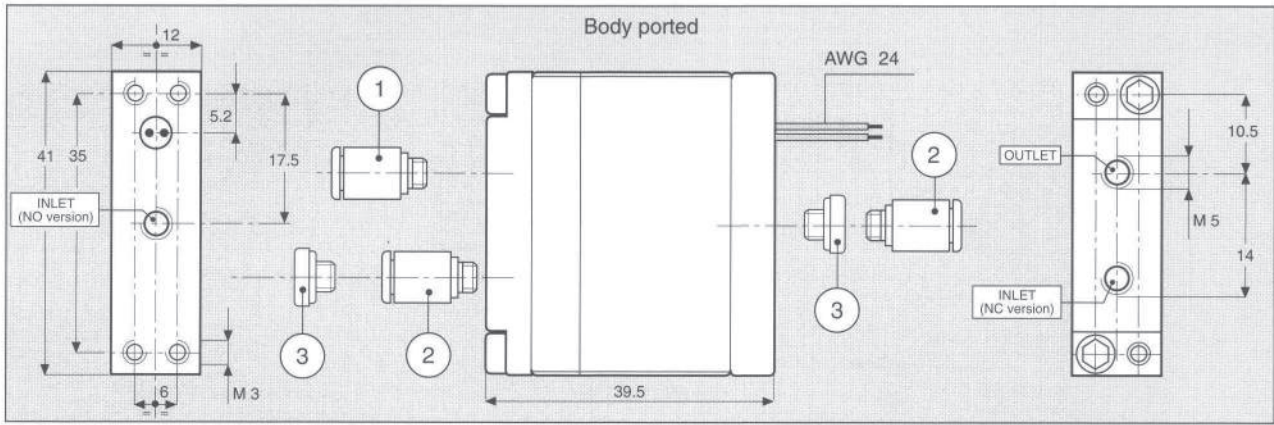
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

**• OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All

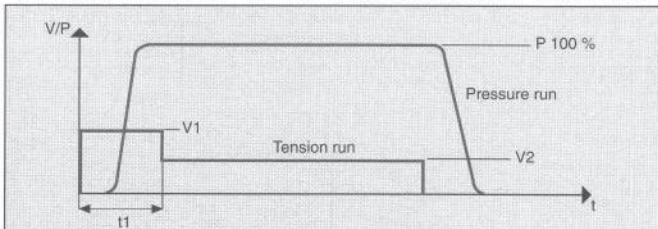




ACCESSORIES		
Reference	Quantity	Description
1	1	VACUUM FITTING Ø 4/6
2	1	VACUUM FITTING Ø 4/6
3	1	PLUG

NOTE: Inch size available

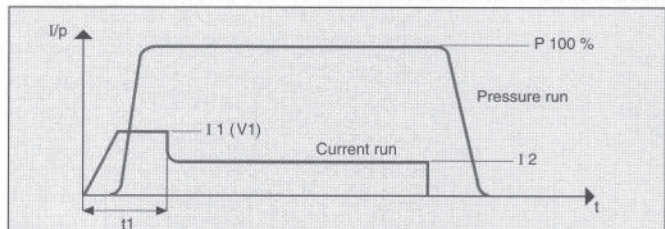
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC	t1 = 2 ms	V2 = 5 VDC
-------------	-----------	------------

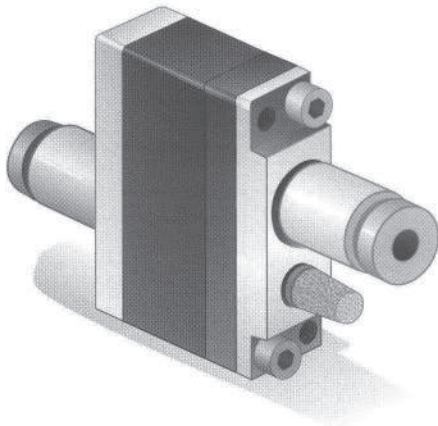
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



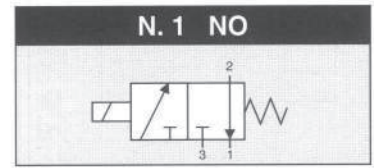
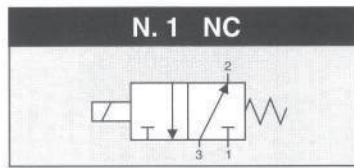
N.B. XX MODELS ARE CONTROLLED IN CURRENT

I1 = 0.7 A	t1 = 2 ms	I2 = 0.3 A
------------	-----------	------------





CONTROL: DIRECT



GENERAL CHARACTERISTICS

FLUID	Non-lubricated dry air, neutral gasesi (-10 + 50°C)		
FILTRATION RATING	Min 40 micron		
TEMPERATURE	- 10 + 50°C (Standard version)		
RESPONSE TIME IN OPENING	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	35 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 62		

IDENTIFICATION CODE

	H	X	7	2	1	1	0	V	A	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICE**

H	Ø eq = 0.9 mm
B	Ø eq = 1.3 mm
M	Ø eq = 1.5 mm (control tension JJ XX KK)

**VERSION**

	Body ported
H	Body ported - HNBR Shutters
F	Manifold
J	Manifold - HNBR Shutters

**No. ELECTRICAL CONTROLS**

1	1 Control
---	-----------

**PORT CONNECTION**

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

**OUTLETS**

1	1 Outlet
---	----------

**FUNCTION**

A	NO
C	NC

**TYPE**

3	3/2
---	-----

**CONTROL TENSION**

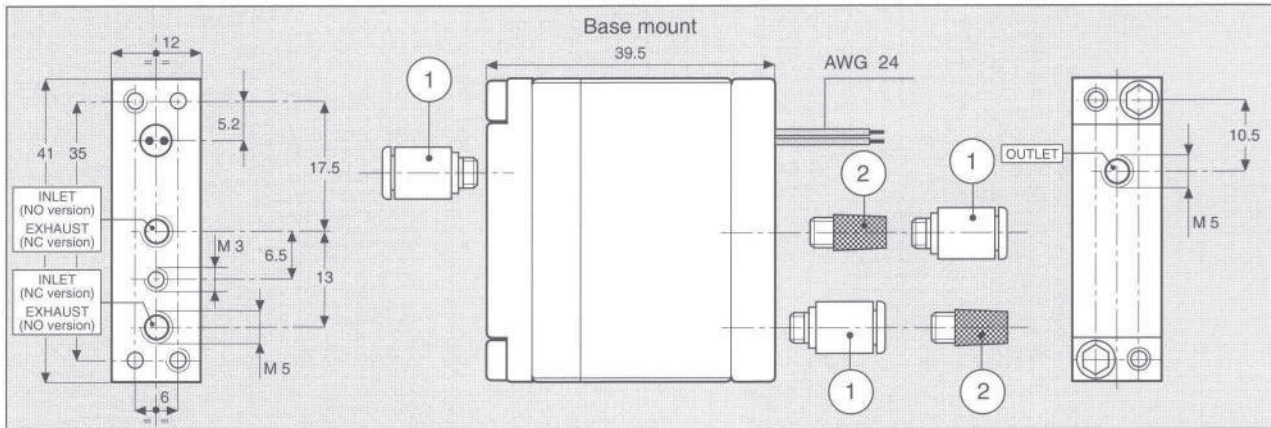
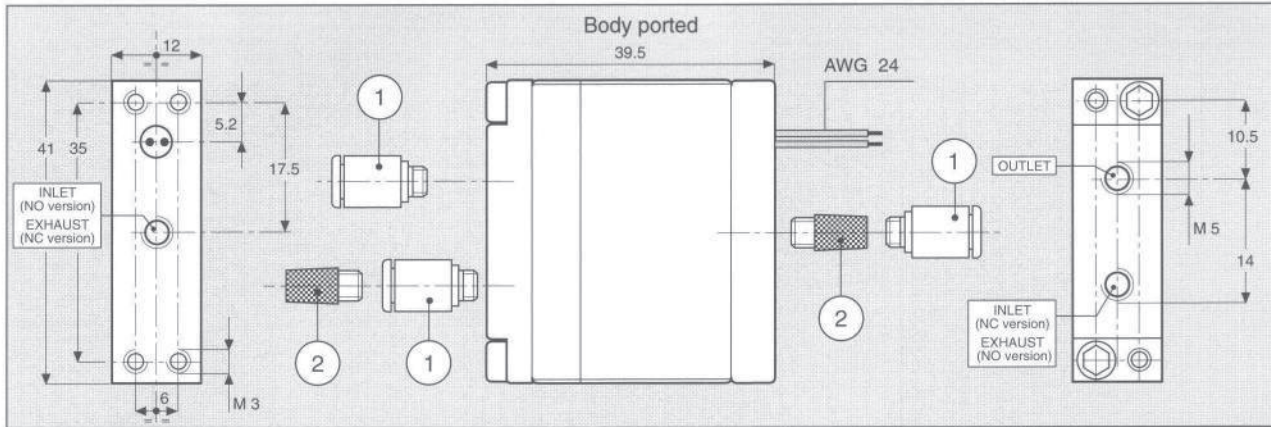
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

<sup>(1)</sup> Only with Electronic Driver Boards PRB or UDB

**OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All

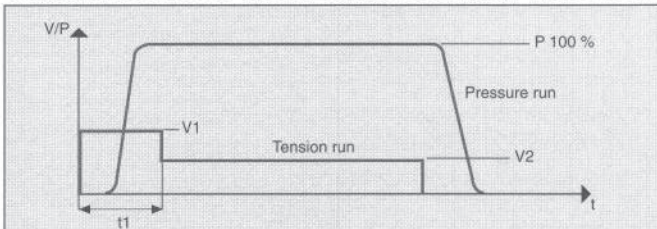




ACCESSORIES		
Reference	Quantity	Description
1	2	VACUUM FITTING Ø 4/6
2	1	SILENCER

NOTE: Inch size available

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



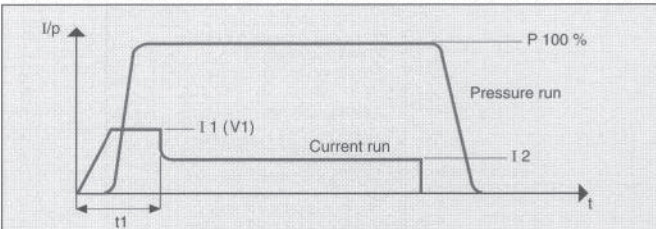
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 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

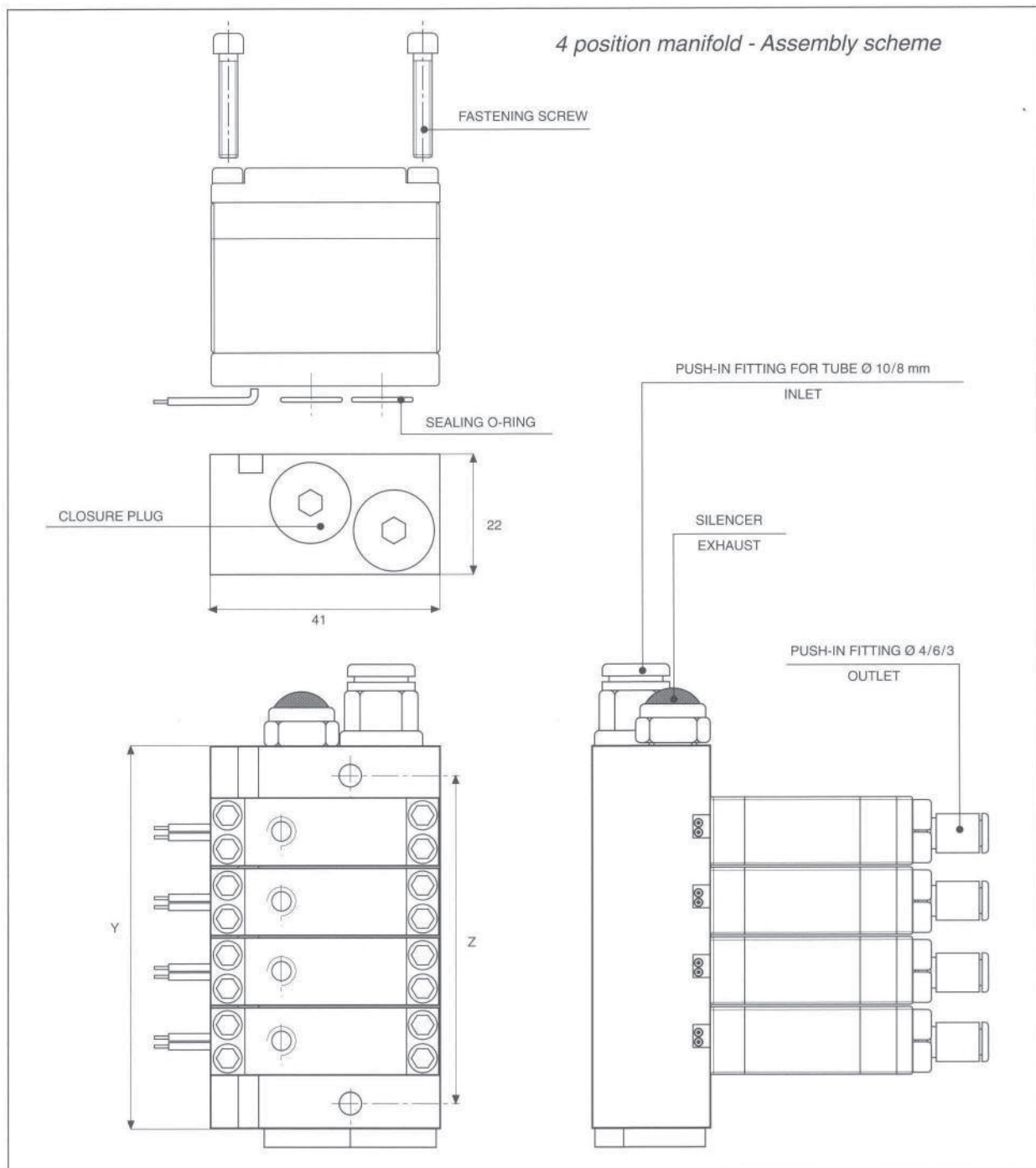


## Manifold - 720 Series

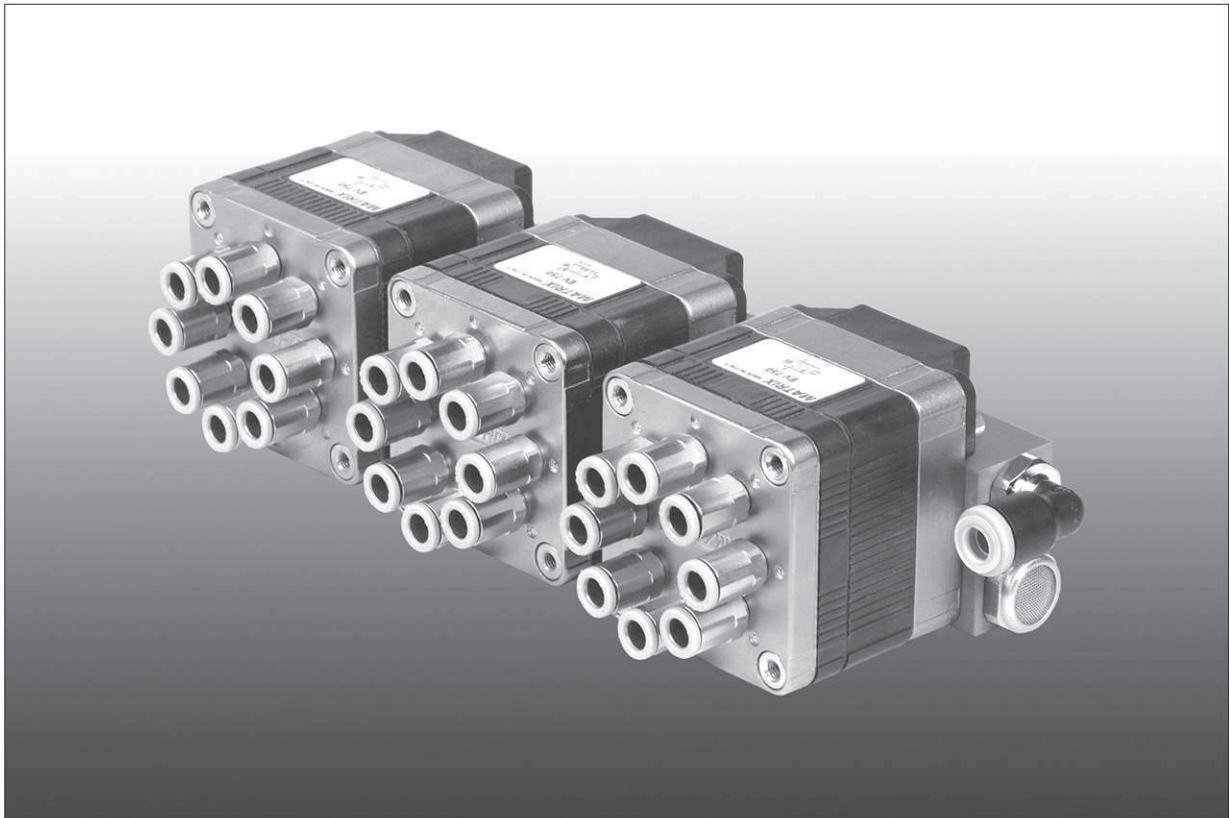
Manifolds for multiple installing represent a fast and safe system of connection for all 720 Series models. Manifolds are available in patterns for 4 and 8 solenoid valves. They come in a kit with fastening screws, inlet push-in fittings, closure plug and sealing O-Rings.

### How to order manifolds - Available patterns

Pattern	Kit code	Y ( mm )	Z ( mm )
no. 4 Solenoid valves	861.310 I	70	60
no. 8 Solenoid valves	861.321 T	120	110



# 750 Series



**Compact solenoid multi-valve | 2/2-3/2 NC-NO**  
PNEUMATIC DIVISION

**MATRIX**  
mechatronics

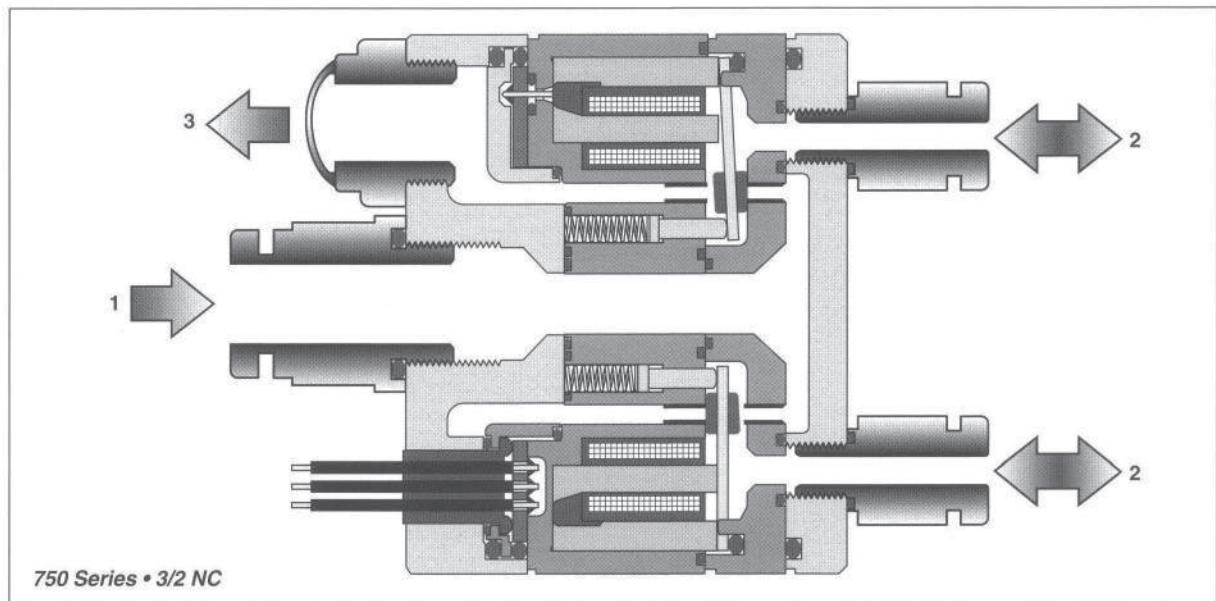


# SOLENOID VALVES 750 SERIES • 2/2 • 3/2

750 Series 2/2 and 2/3 encloses in a single body eight shutters in NC or NO configuration. The series modularity allows to have at disposal a single outlet or 2, 4, 8 independent outlets. All innovations offered by Matrix technology are present. Said characteristics couple manufacturing simplicity and ability of dynamic high-performances. Response times are of millisecond range, while operation life is over 500 million cycles. The Series includes the Vacuum versions designed for uses with vacuum technique. Due to the facility to be speed-up controlled, dynamic characteristics are even more improved: standard solenoid valves equipped with 24 VDC control present response times lower than 5 ms in opening and 2 ms in closing, with a maximum operation frequency 200 Hz. On the contrary, solenoid valves equipped with speed-up control present a response time both in opening and closing lower than 2 ms, with a maximum operation frequency 300 Hz.

Besides high-speed characteristics, solenoid valves 720 Series offer flow rate value to 100ℓ/minute (ANR), with supply pressure from 0 to 8 bar.

For 750 multi-function series, a lot of accessories are available, such as IP 52 or IP 56 connectors, manifolds with different positions and 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.

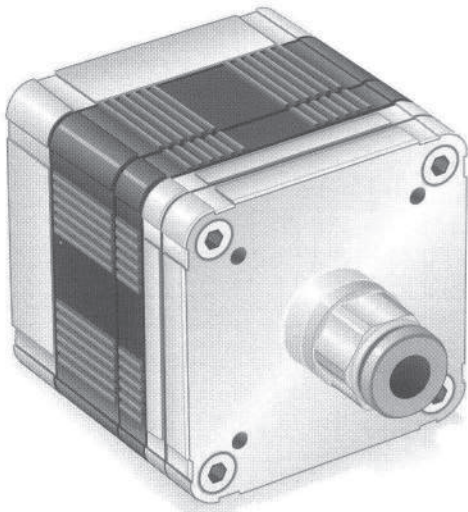
## Applications

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

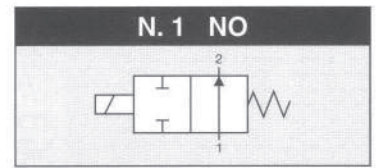
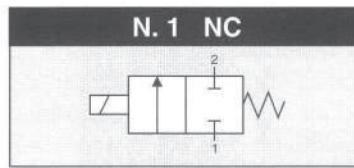
## Materials

- Body in PPS.
- Flanges in Al. (in INOX if required).
- Seals in NBR. (shutters in HNBR if required).





CONTROL: DIRECT PFM PNM PWM



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	380 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	1	1	0	2	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**OUTLETS**

1	1 Outlet
---	----------

**FLOW RATE** (at 6 bar)

H	420 Nl/min
B	600 Nl/min
M	700 Nl/min (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

1	1 Control
2	2 Controls
4	4 Controls
8	8 Controls
C	4 Controls / Integrated diodes with common 0 V
D	8 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12 / 24 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection Easy IP 52 - IP 65 ( only 4 and 8 controls )

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

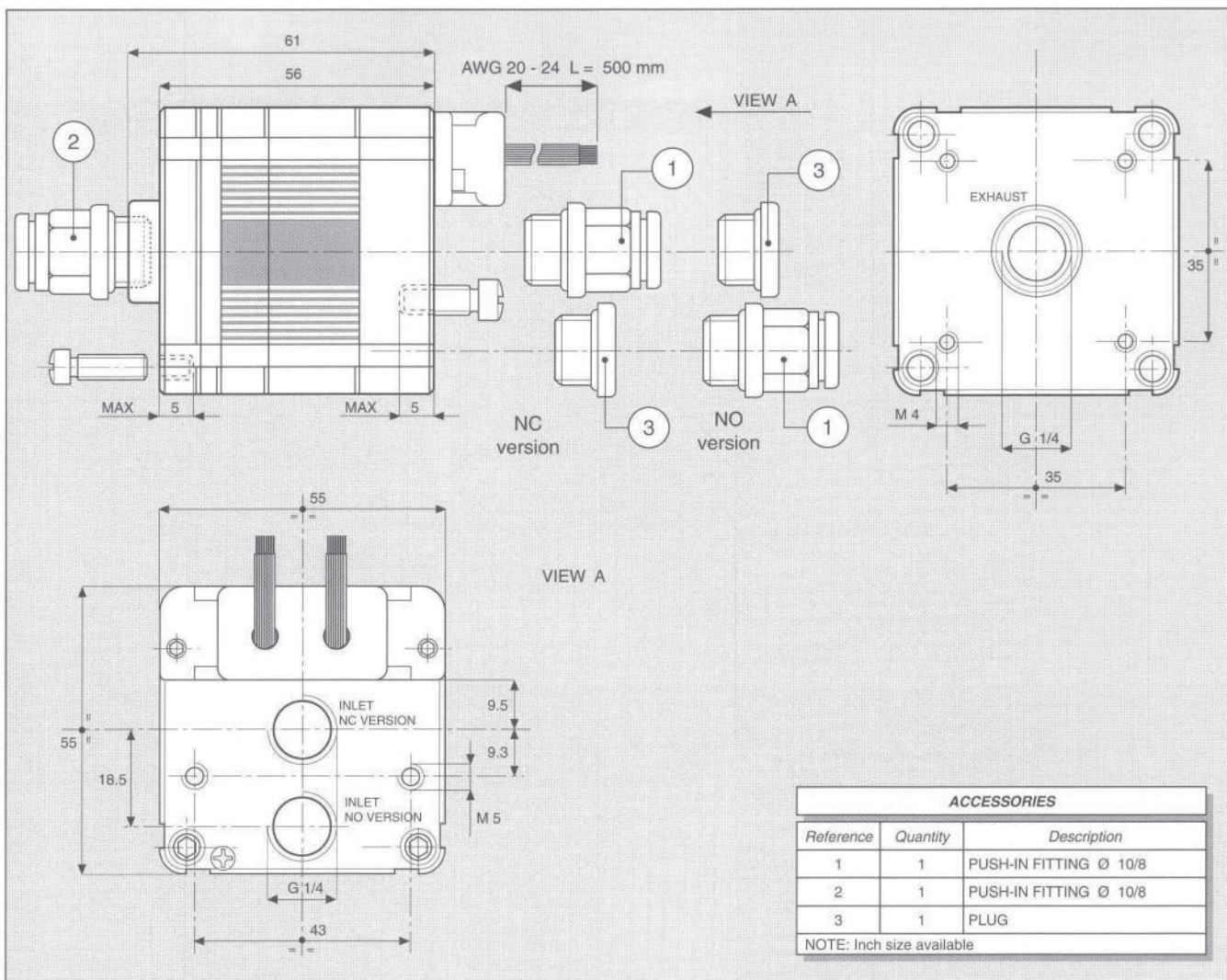
12	12 VDC ± 10 %	ED 100 %	1.4 ± 11.6W
24	24 VDC ± 10 %	ED 100 %	1.2 ± 10.0W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 ± 15.2W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

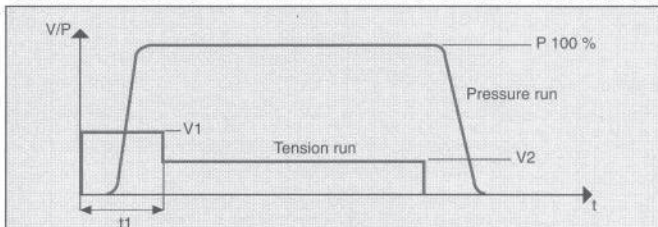
**OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All





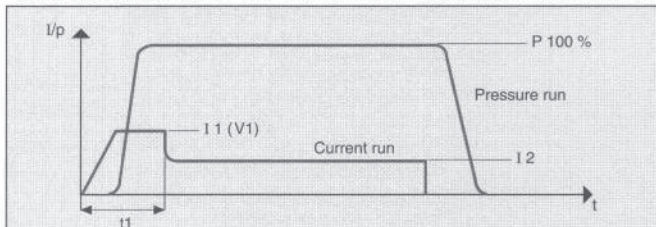
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

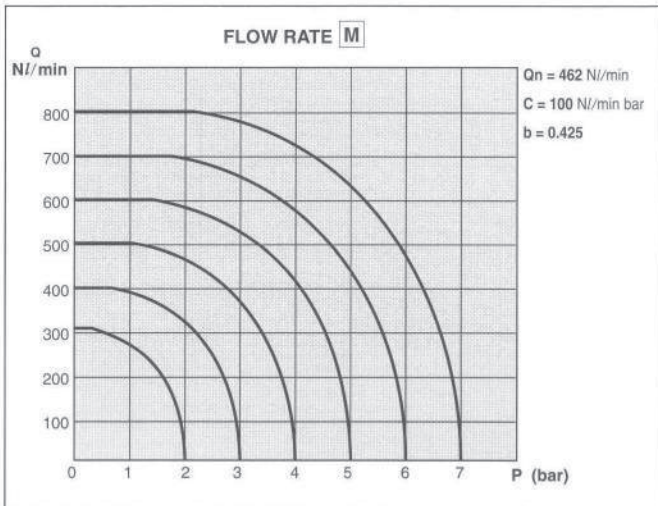
V1 = 24 VDC      t1 = 2 ms      V2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



N.B. XX MODELS ARE CONTROLLED IN CURRENT

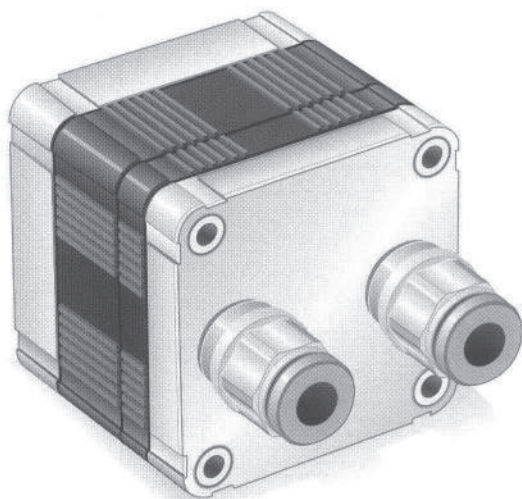
I1 = 5.6 A      t1 = 2 ms      I2 = 2.4 A



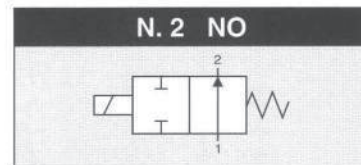
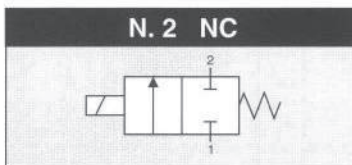
ELECTRICAL PORT CONNECTION

COLOUR	1 CONTROL	2 CONTROLS	4 CONTROLS	8 CONTROLS
BLACK	COMMON	COMMON	COMMON	COMMON
BROWN	—	1	1	1
RED	1	2	2	2
ORANGE	—	—	3	3
YELLOW	—	—	4	4
GREEN	—	—	—	5
BLUE	—	—	—	6
VIOLET	—	—	—	7
GREY	—	—	—	8





CONTROL: DIRECT PFM PNM PWM



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	330 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	2	2	0	2	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**OUTLETS**

2	2 Outlets
---	-----------

**FLOW RATE (at 6 bar)**

H	200 Nl/min
B	310 Nl/min
M	360 Nl/min (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

2	2 Controls
4	4 Controls
8	8 Controls
C	4 Controls / Integrated diodes with common 0 V
D	8 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12 / 24 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65 ( only 4 and 8 controls )

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

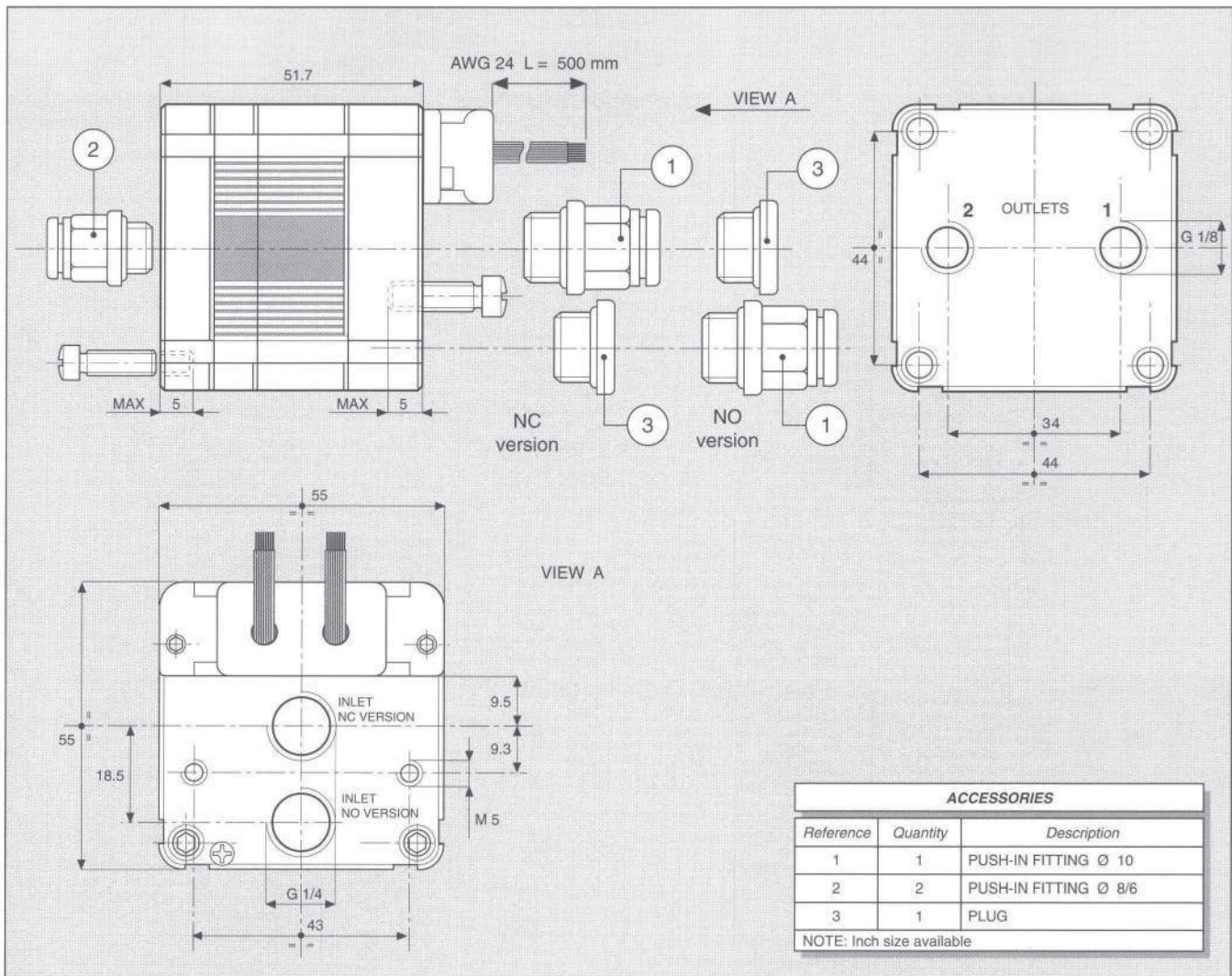
12	12 VDC ± 10 %	ED 100 %	1.4+5.8 W
24	24 VDC ± 10 %	ED 100 %	1.2+5.0 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9+7.6 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

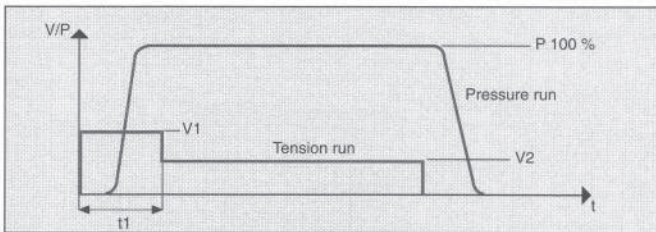
**OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	.... XX / KK
8	2 - 6 bar	All





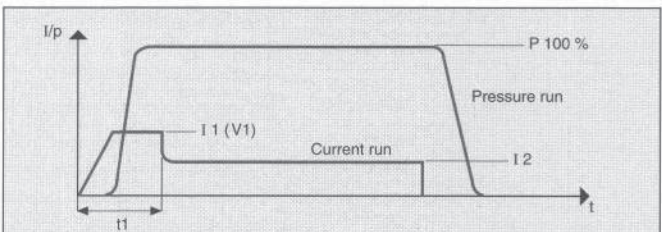
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

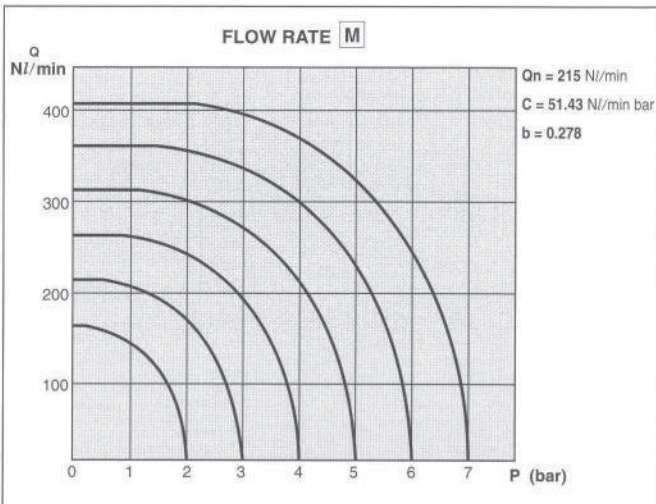
V 1 = 24 VDC      t 1 = 2 ms      V 2 = 5 VDC

**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX**



N.B. XX MODELS ARE CONTROLLED IN CURRENT

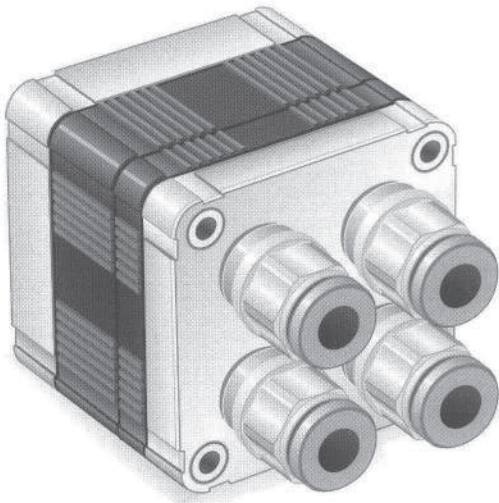
I 1 = 2.8 A      t 1 = 2 ms      I 2 = 1.2 A



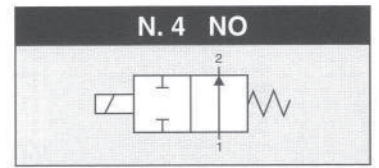
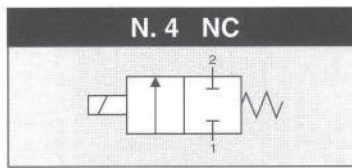
**ELECTRICAL PORT CONNECTION**

COLOUR	2 CONTROLS (SINGLE CABLES)	2 CONTROLS EASY CONNECTION IP 52	4 CONTROLS (OUTLET)	8 CONTROLS (OUTLET)
BLACK	COMMON	COMMON	COMMON	COMMON
BROWN	1	1	1 (1)	1 (1)
RED	2	—	2 (1)	2 (1)
ORANGE	—	2	3 (2)	3 (1)
YELLOW	—	—	4 (2)	4 (1)
GREEN	—	—	—	5 (2)
BLUE	—	—	—	6 (2)
VIOLET	—	—	—	7 (2)
GREY	—	—	—	8 (2)





CONTROL: DIRECT PFM PNM PWM



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	340 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

H X 7 5 4 4 E 2 C 2 2 4

**OUTLETS**

4 4 Outlets

**FLOW RATE (at 6 bar)**

H	100 NI/min
B	160 NI/min
M	200 NI/min (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

4	4 Controls
8	8 Controls
C	4 Controls / Integrated diodes with common 0 V
D	8 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12 / 24 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

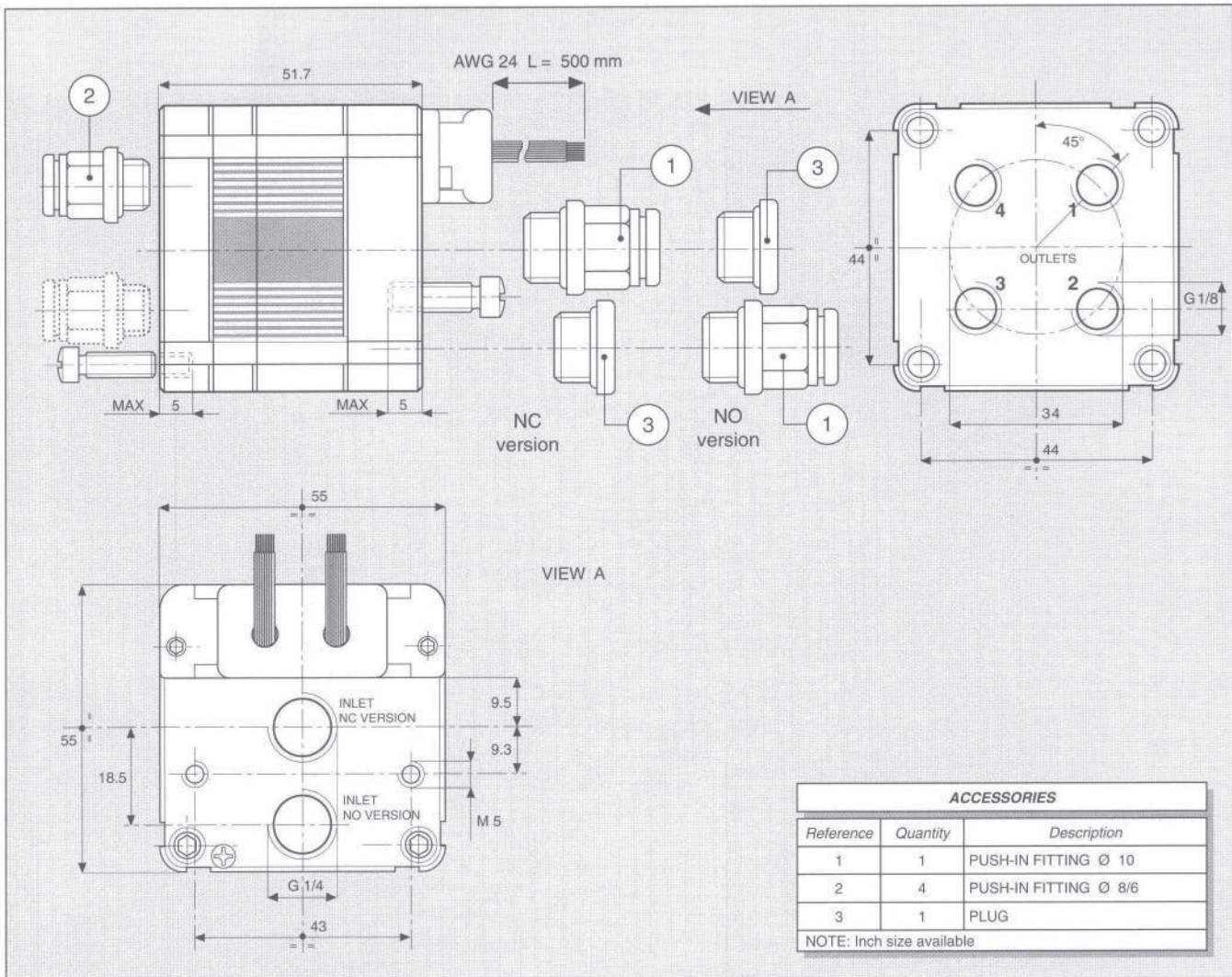
12	12 VDC ± 10 %	ED 100 %	1.4+2.9 W
24	24 VDC ± 10 %	ED 100 %	1.2+2.5 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9+3.8 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

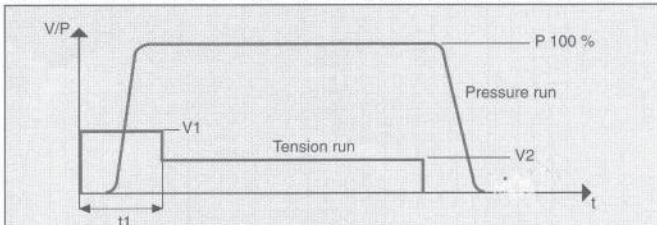
**OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	... XX / KK
8	2 - 6 bar	All





CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



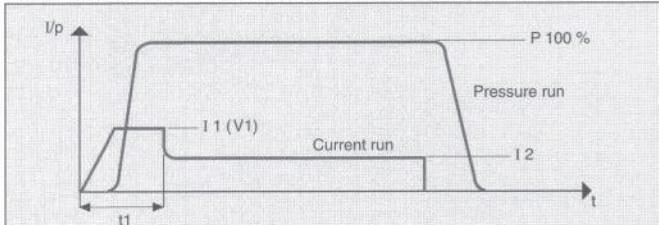
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 ms

V2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX

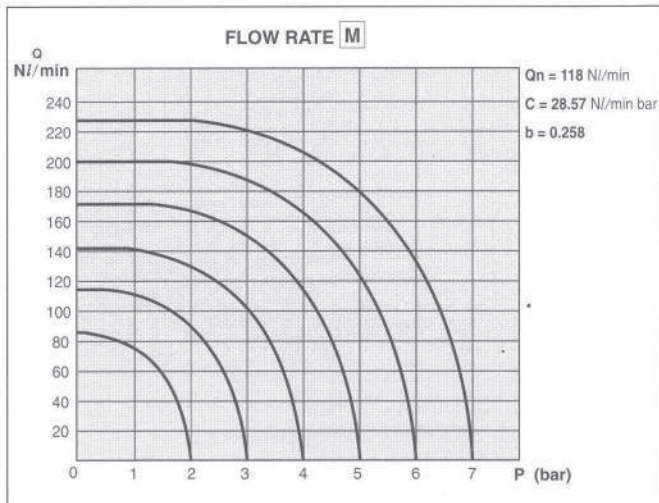


N.B. XX MODELS ARE CONTROLLED IN CURRENT

I1 = 1.4 A

t1 = 2 ms

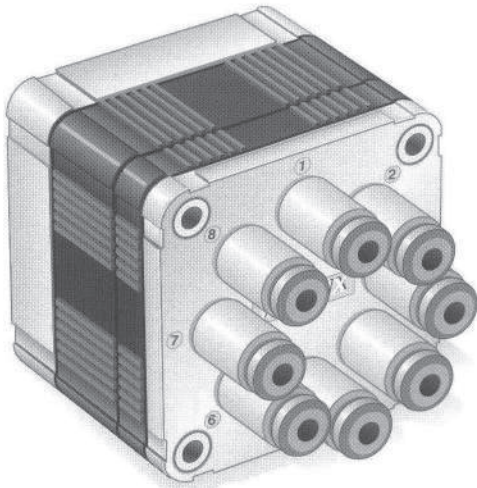
I2 = 0.6 A



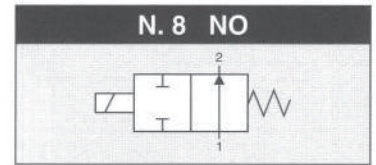
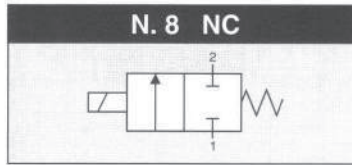
ELECTRICAL PORT CONNECTION

COLOUR	4 CONTROLS	8 CONTROLS (OUTLET)
BLACK	COMMON	COMMON
BROWN	1	1 (1)
RED	2	2 (1)
ORANGE	3	3 (2)
YELLOW	4	4 (2)
GREEN	—	5 (3)
BLUE	—	6 (3)
VIOLET	—	7 (4)
GREY	—	8 (4)





CONTROL: **DIRECT** PFM PWM



**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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	350 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

**IDENTIFICATION CODE**

	H	X	7	5	8	8	E	2	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**OUTLETS**

8	8 Outlet
---	----------

**FLOW RATE (at 6 bar)**

H	50 NI/min
B	80 NI/min
M	100 NI/min (control tension JJ XX KK)

**VERSION**

	Standard
H	NBR Shutters

**No. ELECTRICAL CONTROLS**

8	8 Controls
D	8 Controls / Integrated diodes with common 0 V
G	8 Controls / Integrated diodes with common 12/24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

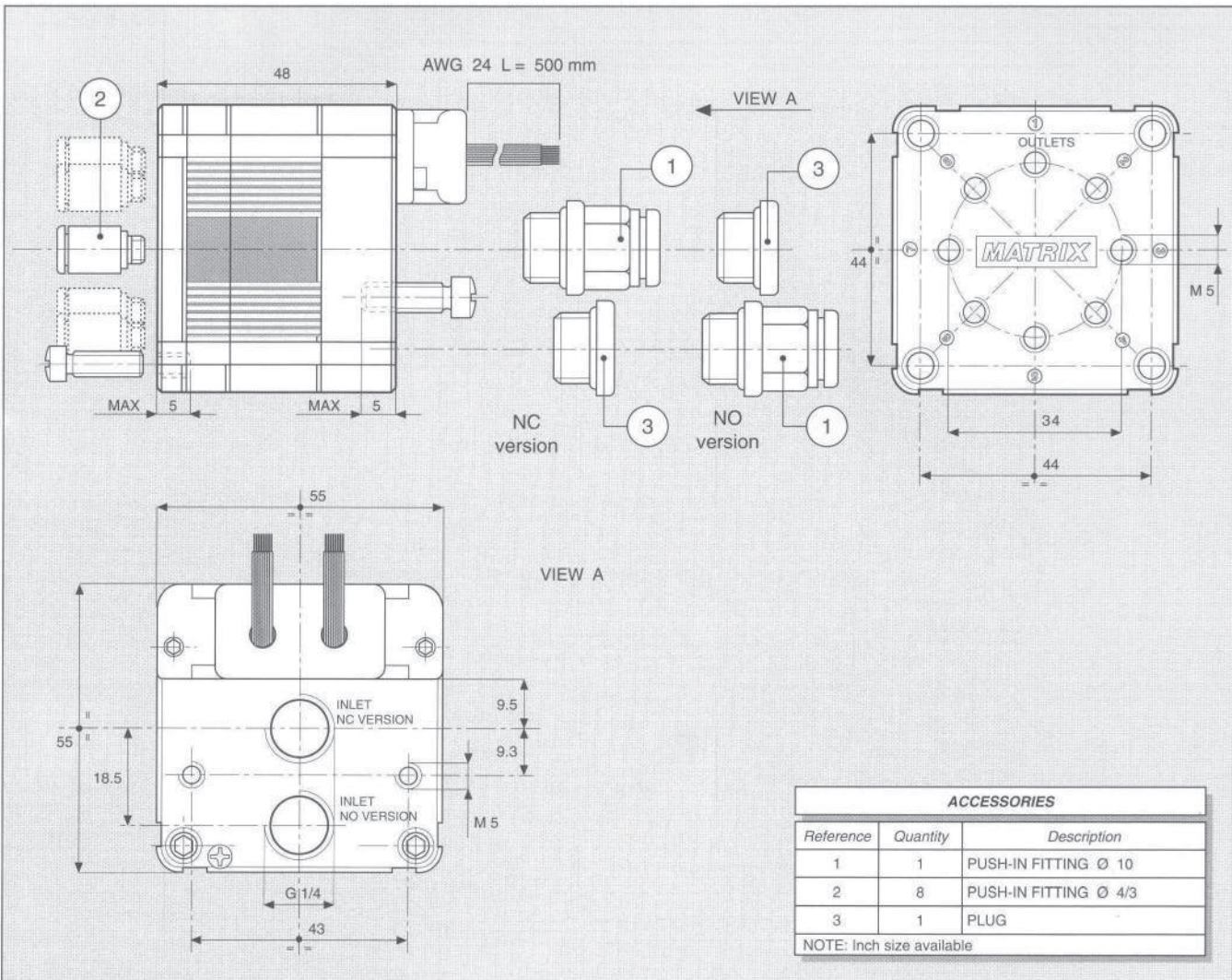
12	12 VDC ± 10%	ED 100%	1.4 W
24	24 VDC ± 10%	ED 100%	1.2 W
JJ	24 VDC ± 10%	ED 100% <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100% <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100% <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

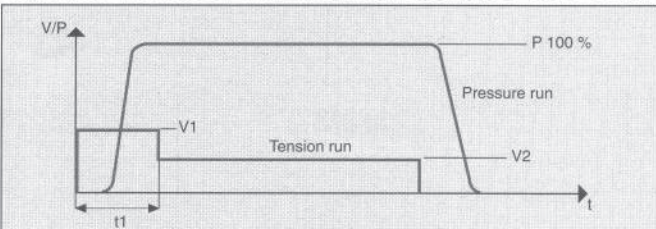
**OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All





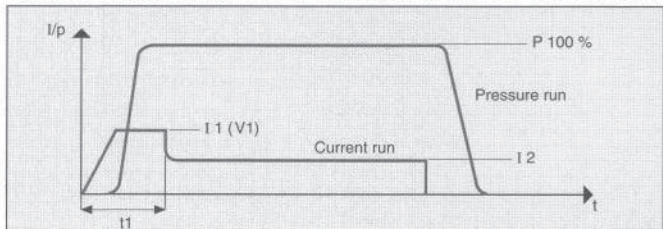
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

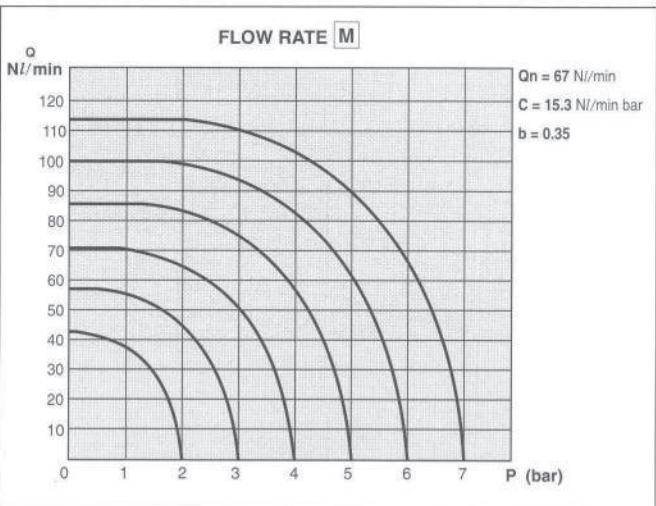
V1 = 24 VDC      t1 = 2 ms      V2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



N.B. XX MODELS ARE CONTROLLED IN CURRENT

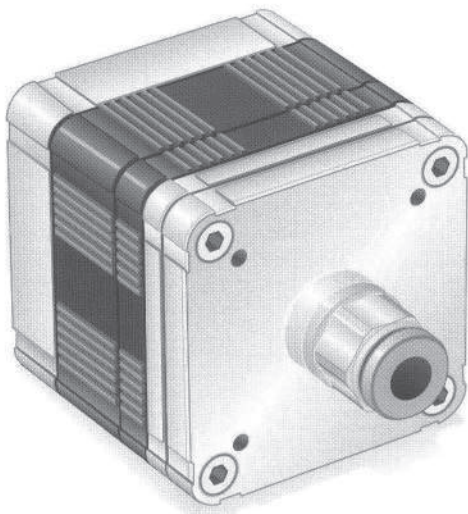
I1 = 0.7 A      t1 = 2 ms      I2 = 0.3 A



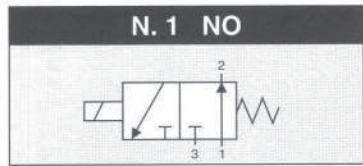
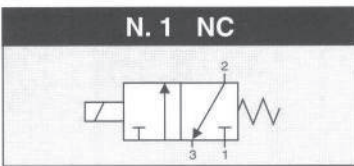
ELECTRICAL PORT CONNECTION

COLOUR	8 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8





CONTROL: DIRECT



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	380 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 62		

IDENTIFICATION CODE

	H	X	7	5	1	1	0	2	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

● **OUTLETS**

1	1 Outlet
---	----------

● **FLOW RATE (at 6 bar)**

H	420 Nl/min
B	600 Nl/min
M	700 Nl/min (control tension JJ XX KK)

● **VERSION**

	Standard
H	HNBR Shutters

● **No. ELECTRICAL CONTROLS**

1	1 Control
---	-----------

● **PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
---	------------------------------------

● **SPECIAL PROTECTIONS**

M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

● **FUNCTION**

A	NO
C	NC

● **TYPE**

3	3/2
---	-----

● **CONTROL TENSION**

12	12 VDC ± 10 %	ED 100 %	11.6 W
24	24 VDC ± 10 %	ED 100 %	10.0 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	15.2 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

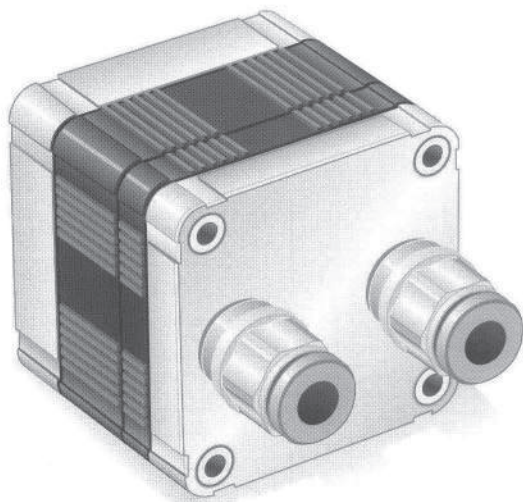
● **PRESSIONE DI ESERCIZIO**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All

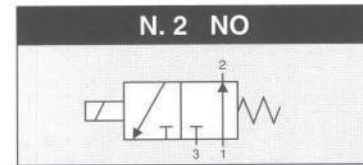
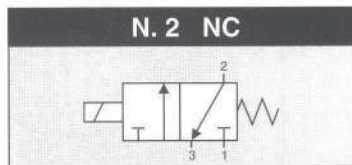








CONTROL: DIRECT



**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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	330 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62		

**IDENTIFICATION CODE**

	H	X	7	5	2	2	0	2	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**• FLOW RATE (at 6 bar)**

H	200 Nl/min
B	310 Nl/min
M	360 Nl/min (control tension JJ XX KK)

**• VERSION**

	Standard
H	HNBR Shutters

**• No. ELECTRICAL CONTROLS**

2	2 Controls
---	------------

**• PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52

**• OUTLETS**

2	2 Outlets
---	-----------

**• FUNCTION**

A	NO
C	NC

**• TYPE**

3	3/2
---	-----

**• CONTROL TENSION**

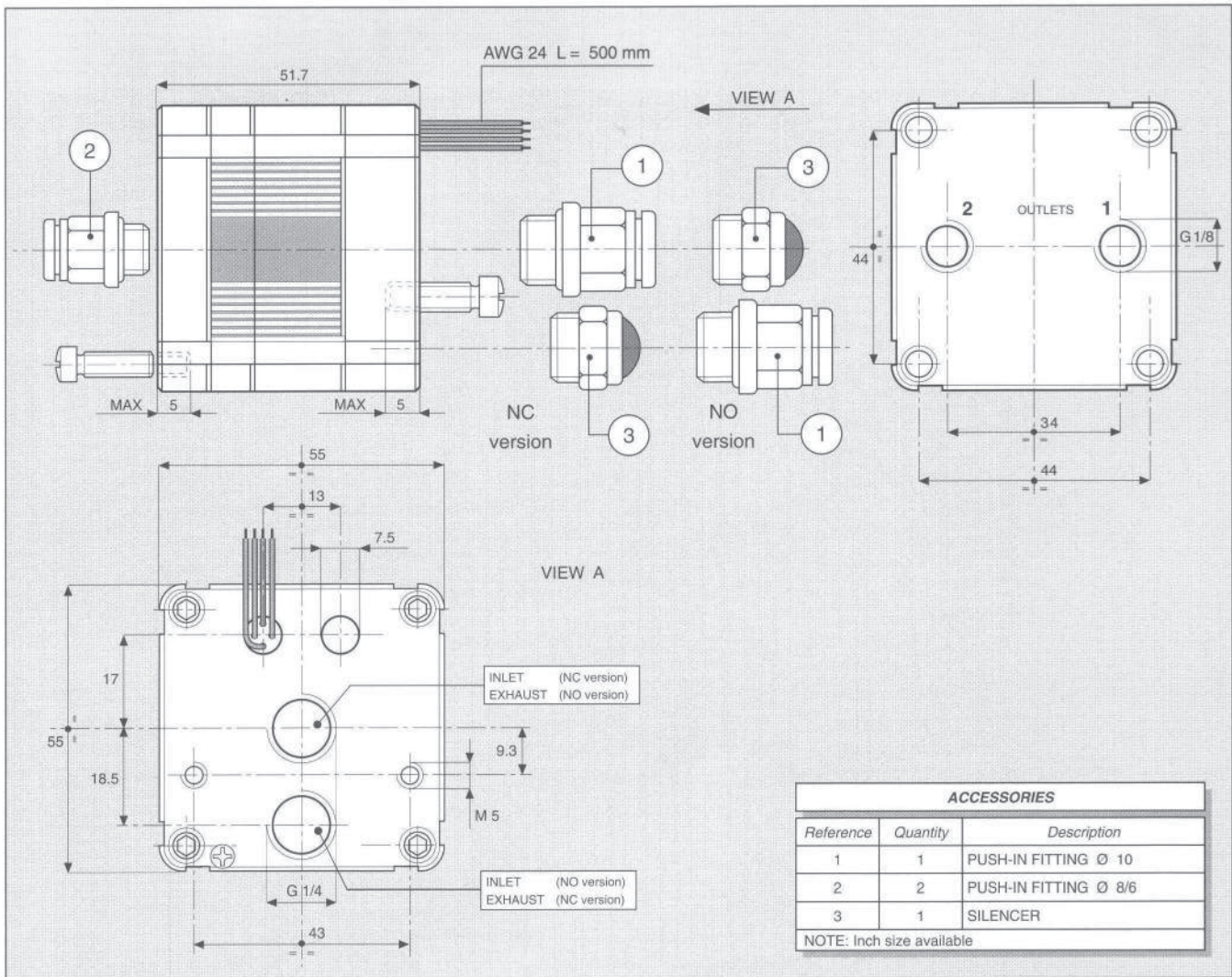
12	12 VDC ± 10 %	ED 100 %	5.8 W
24	24 VDC ± 10 %	ED 100 %	5.0 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	7.6 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

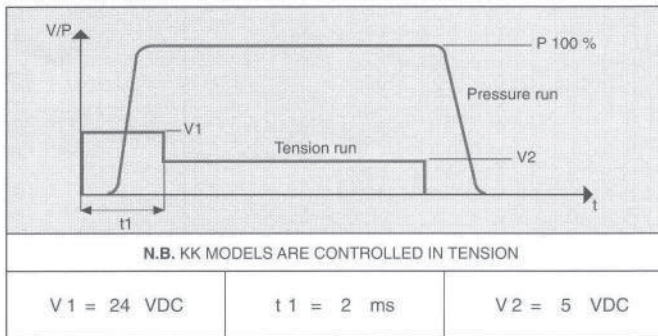
**• OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All

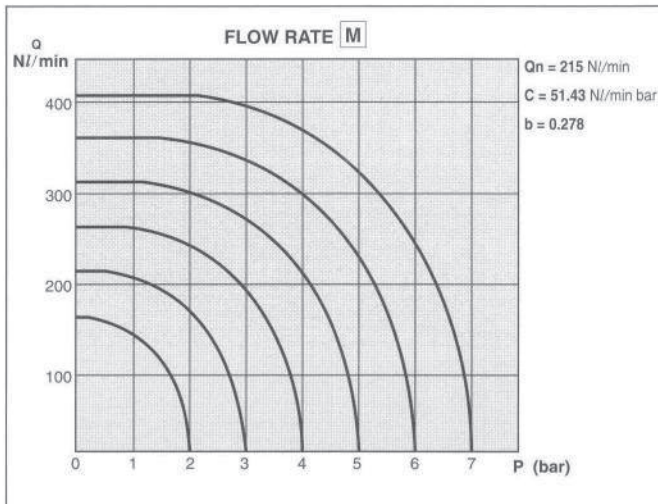
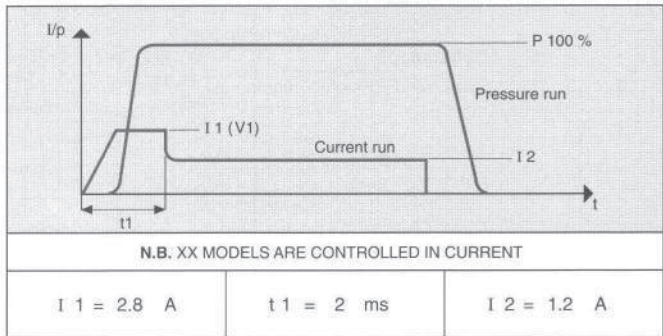




CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



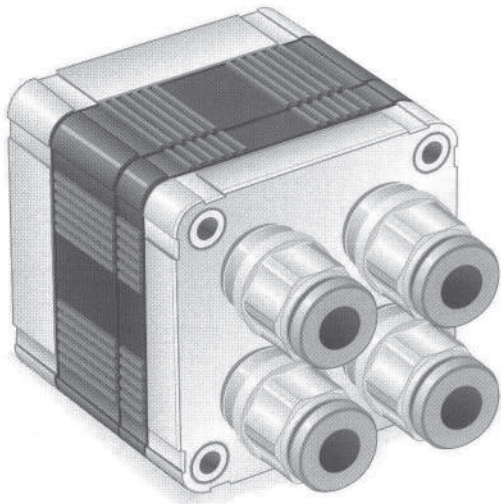
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



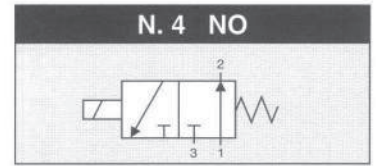
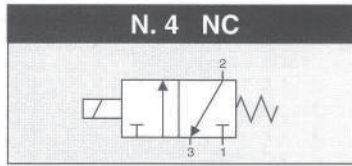
ELECTRICAL PORT CONNECTION

COLOUR	2 CONTROLS (SINGLE CABLES)	2 CONTROLS EASY CONNECTION IP 52
BLACK	COMMON	COMMON
BROWN	1	1
RED	2	—
ORANGE	—	2





CONTROL: DIRECT



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	340 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	4	4	E	2	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**OUTLETS**

4	4 Outlet
---	----------

**FLOW RATE (at 6 bar)**

H	100 NI/min
B	160 NI/min
M	200 NI/min (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

4	4 Controls
C	4 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12/24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

3	3/2
---	-----

**CONTROL TENSION**

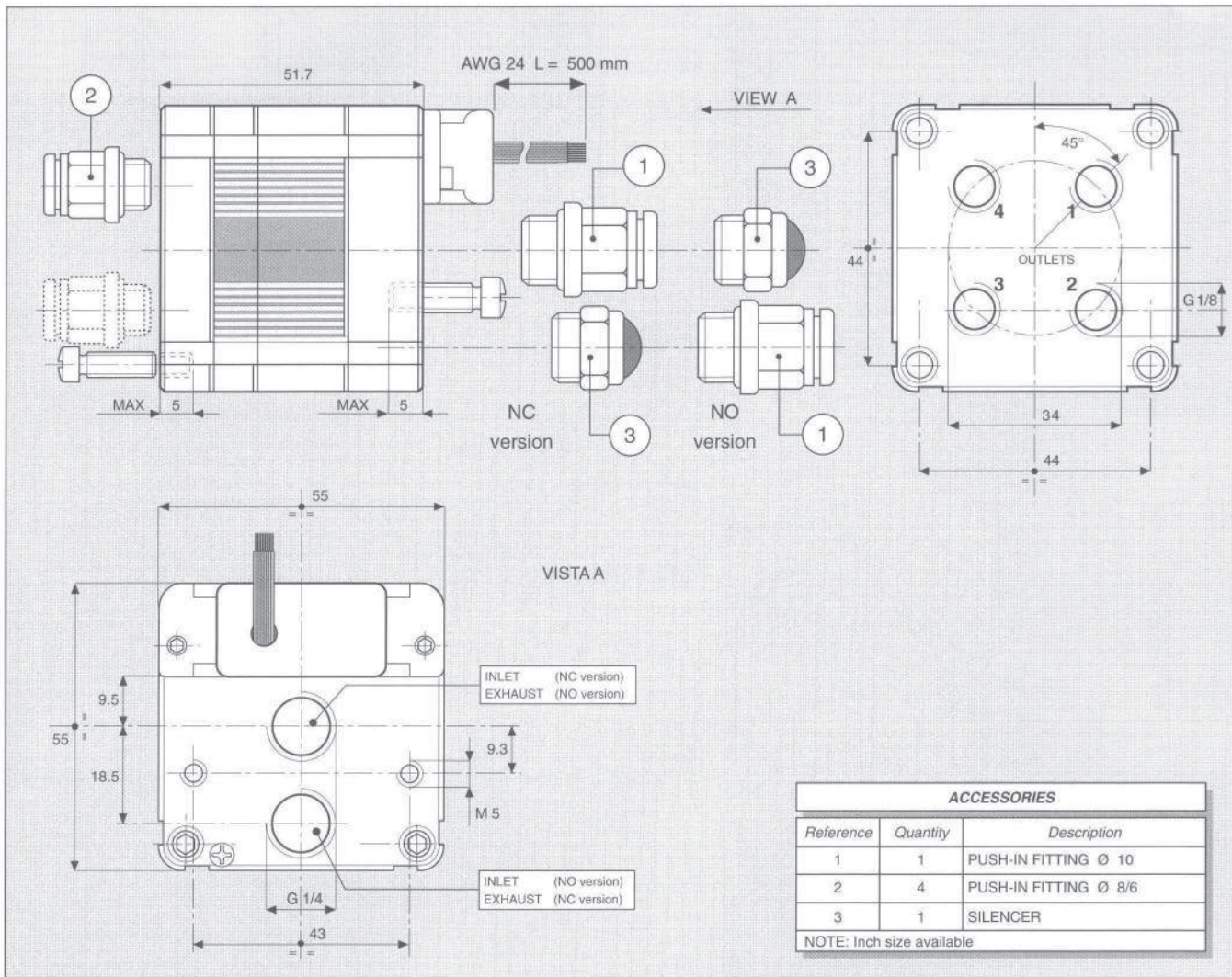
12	12 VDC ± 10%	ED 100%	2.9 W
24	24 VDC ± 10%	ED 100%	2.5 W
JJ	24 VDC ± 10%	ED 100% <sup>(1)</sup>	3.8 W
XX	Speed-up in current	ED 100% <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100% <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

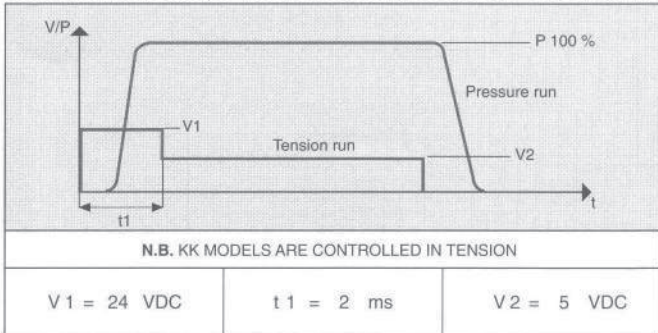
**PRESSIONE DI ESERCIZIO**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX/ KK
8	2 - 6 bar	All

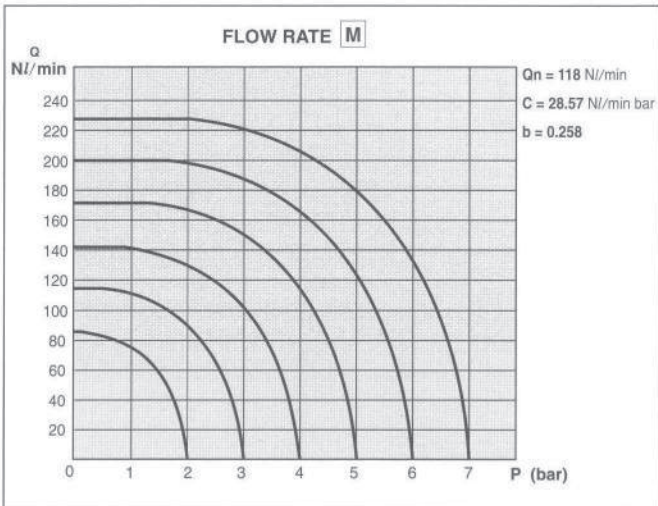
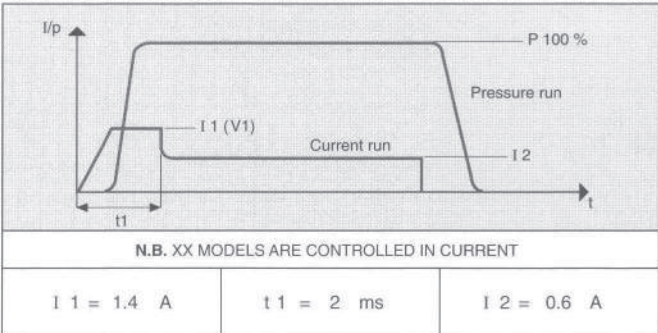




CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



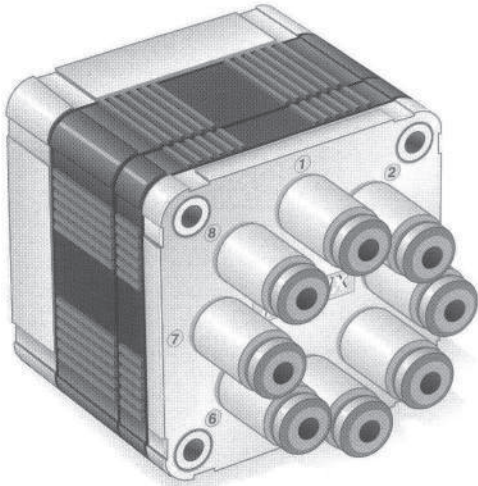
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



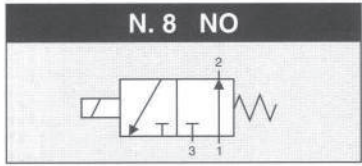
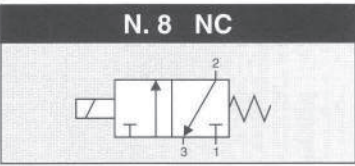
ELECTRICAL PORT CONNECTION

COLOUR	4 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4





CONTROL: DIRECT



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	350 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	8	8	E	2	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**OUTLETS**

8	8 Outlet
---	----------

**FLOW RATE (at 6 bar)**

H	50 NI/min
B	80 NI/min
M	100 NI/min (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

8	8 Controls
D	8 Controls / Integrated diodes with common 0 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

3	3/2
---	-----

**CONTROL TENSION**

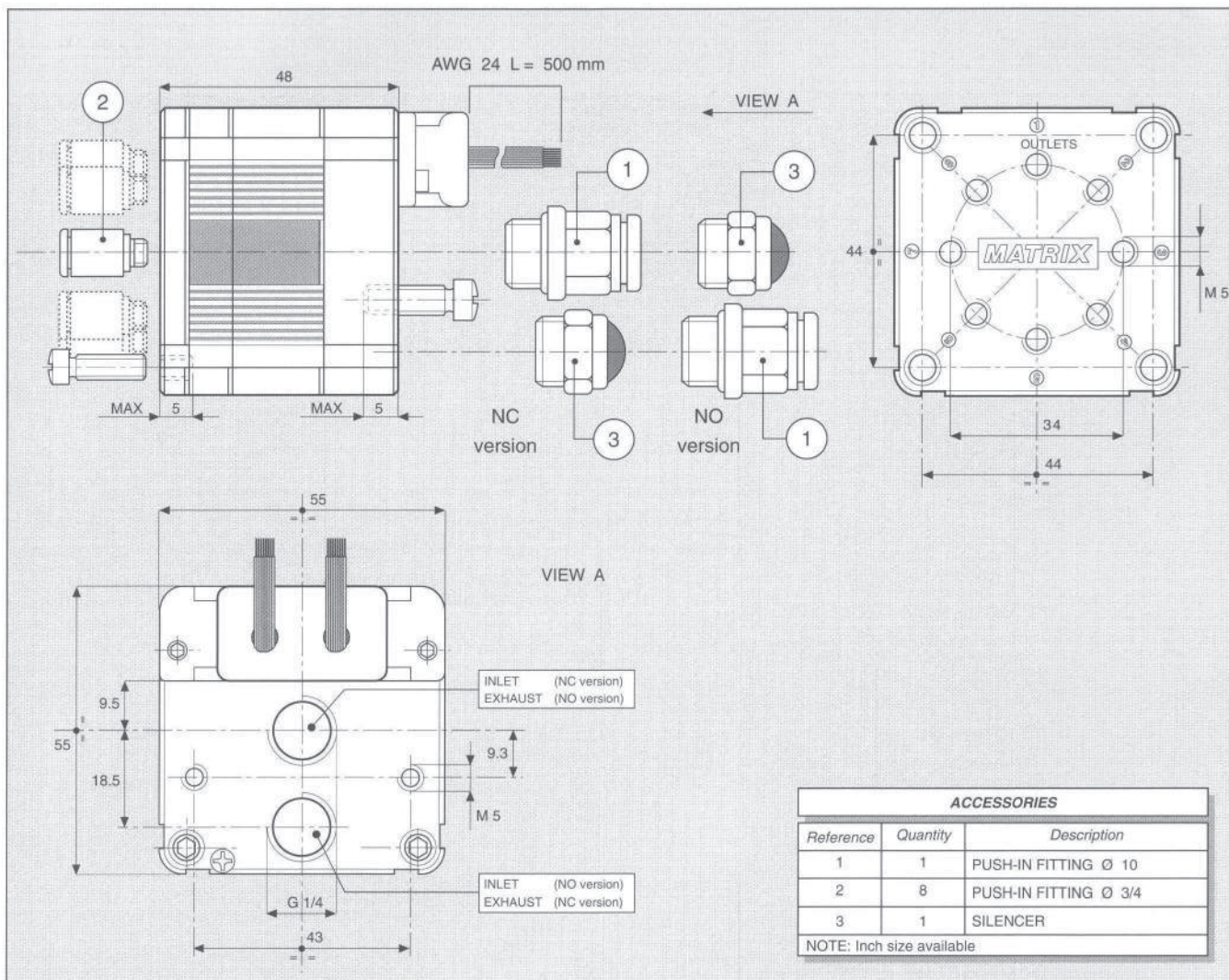
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

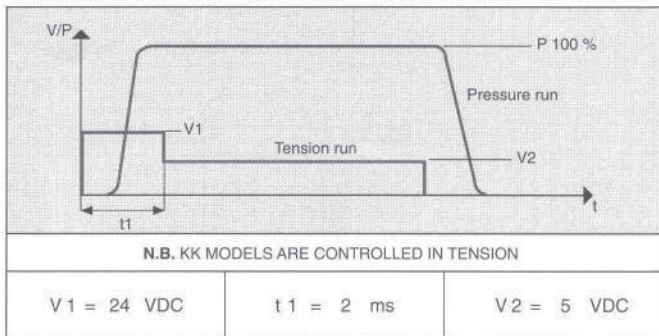
**OPERATING PRESSURE**

	RANGE	MODELS
1	0 - 4 bar	All
2	4 - 8 bar	All
3	0 - 8 bar	..... XX / KK
8	2 - 6 bar	All

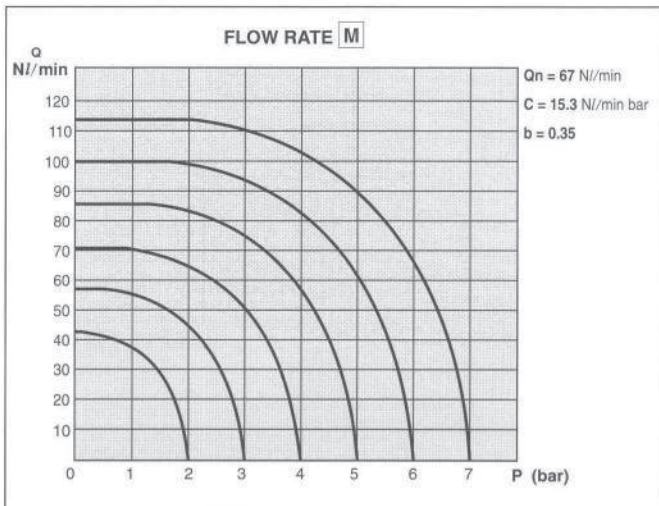
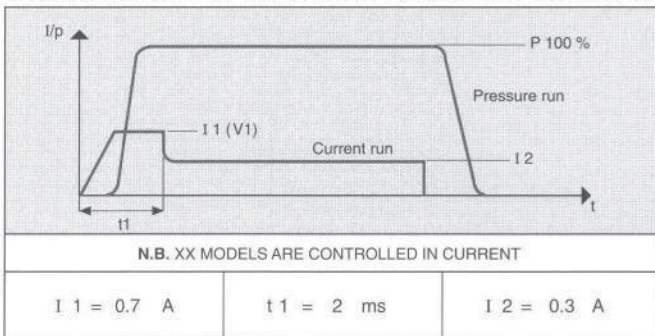




CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



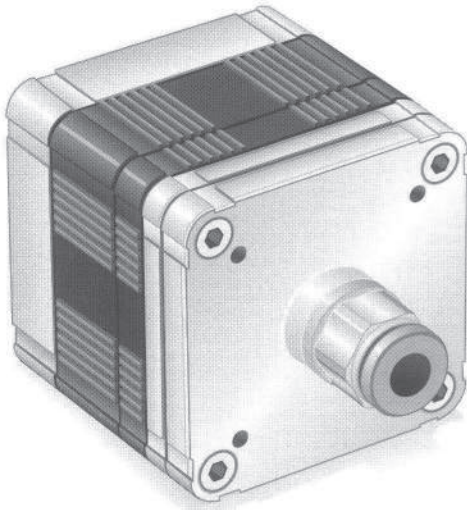
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



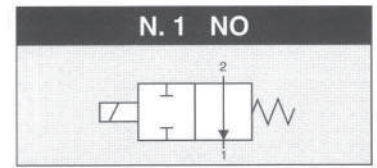
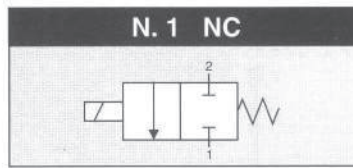
ELECTRICAL PORT CONNECTION

COLOUR	8 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8





**CONTROL:** DIRECT PFM PNM PWM



### GENERAL CHARACTERISTICS

<b>FLUID</b>	Non-lubricated dry air, neutral gases (-10 + 50°C)		
<b>FILTRATION RATING</b>	Min 40 micron		
<b>TEMPERATURE</b>	- 10 + 50°C (Standard version)		
<b>RESPONSE TIME IN OPENING</b>	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
<b>RESPONSE TIME IN CLOSING</b>	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
<b>MAXIMUM FREQUENCY</b>	100 Hz	200 Hz	300 Hz
<b>WEIGHT</b>	380 g		
<b>PRODUCT LIFE EXPECTANCY</b>	≥ 500 M/s cycles		
<b>IP RATING</b>	IP 52 - IP 62 - IP 65		

### IDENTIFICATION CODE

	H	X	7	5	1	1	0	V	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**• ORIFICES**

<b>H</b>	∅ eq = 2.5 mm
<b>B</b>	∅ eq = 3.6 mm
<b>M</b>	∅ eq = 4.2 mm (control tension JJ XX KK)

**• VERSION**

	Standard
<b>H</b>	HNBR Shutters

**• No. ELECTRICAL CONTROLS**

<b>1</b>	1 Control
<b>2</b>	2 Controls
<b>4</b>	4 Controls
<b>8</b>	8 Controls
<b>C</b>	4 Controls / Integrated diodes with common 0 V
<b>D</b>	8 Controls / Integrated diodes with common 0 V
<b>F</b>	4 Controls / Integrated diodes with common 12 / 24 V
<b>G</b>	8 Controls / Integrated diodes with common 12 / 24 V

**• PORT CONNECTION**

<b>0</b>	Integrated cables IP 62 L = 500 mm
<b>E</b>	Presetting for Easy connection IP 52 - IP 65 (only 4 and 8 controls)

**• SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
<b>M</b>	Stainless steel (INOX) flanges
<b>N</b>	EPOX BLACK varnished flanges

**• OUTLETS**

<b>1</b>	Outlet
----------	--------

**• FUNCTION**

<b>A</b>	NO
<b>C</b>	NC

**• TYPE**

<b>2</b>	2/2
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**• CONTROL TENSION**

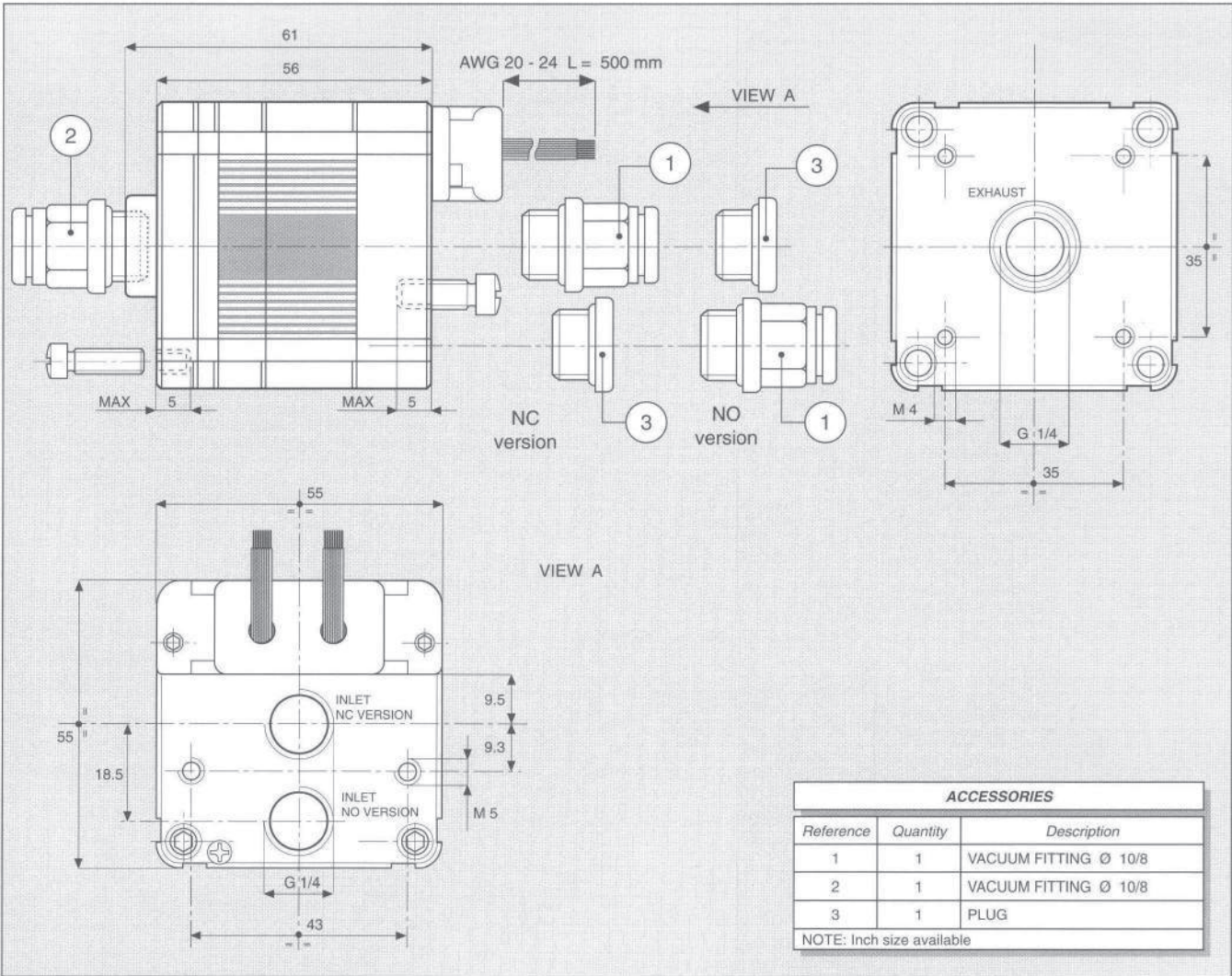
<b>12</b>	12 VDC ± 10 %	ED 100 %	1.4÷11.6W
<b>24</b>	24 VDC ± 10 %	ED 100 %	1.2÷10.0W
<b>JJ</b>	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9÷15.2W
<b>XX</b>	Speed-up in current	ED 100 % <sup>(1)</sup>	—
<b>KK</b>	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

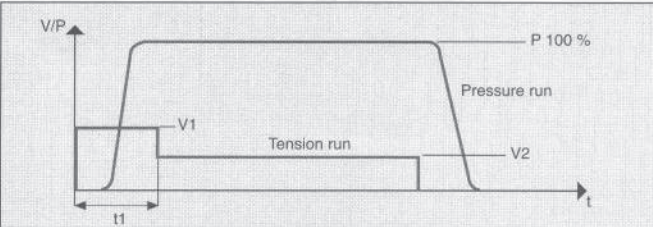
**• OPERATING PRESSURE**

	RANGE	MODELS
<b>V</b>	10 <sup>-5</sup> Torr	All





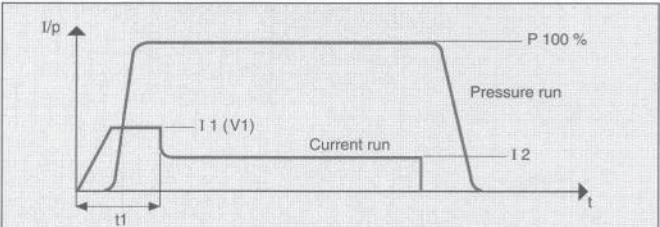
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

V 1 = 24 VDC      t 1 = 2 ms      V 2 = 5 VDC

**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX**



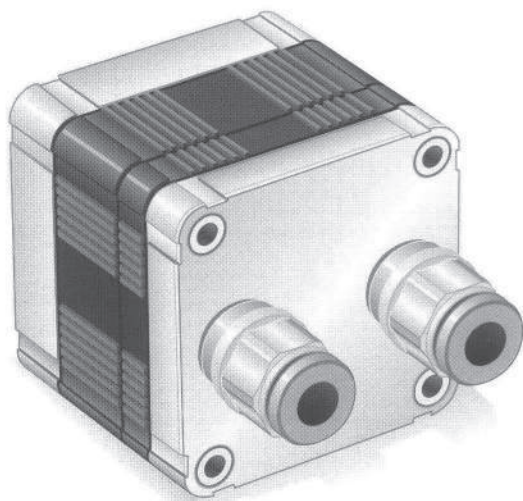
N.B. XX MODELS ARE CONTROLLED IN CURRENT

I 1 = 5.6 A      t 1 = 2 ms      I 2 = 2.4 A

**ELECTRICAL PORT CONNECTION**

COLOUR	1 CONTROL	2 CONTROLS	4 CONTROLS	8 CONTROLS
BLACK	COMMON	COMMON	COMMON	COMMON
BROWN	—	1	1	1
RED	1	2	2	2
ORANGE	—	—	3	3
YELLOW	—	—	4	4
GREEN	—	—	—	5
BLUE	—	—	—	6
VIOLET	—	—	—	7
GREY	—	—	—	8





**CONTROL:**

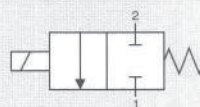
**DIRECT**

**PFM**

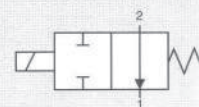
**PNM**

**PWM**

**N. 2 NC**



**N. 2 NO**



## GENERAL CHARACTERISTICS

<b>FLUID</b>	Non-lubricated dry air, neutral gases (-10 + 50°C)		
<b>FILTRATION RATING</b>	Mix 40 micron		
<b>TEMPERATURE</b>	- 10 + 50°C (Standard version)		
<b>RESPONSE TIME IN OPENING</b>	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
<b>RESPONSE TIME IN CLOSING</b>	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
<b>MAXIMUM FREQUENCY</b>	100 Hz	200 Hz	300 Hz
<b>WEIGHT</b>	330 g		
<b>PRODUCT LIFE EXPECTANCY</b>	≥ 500 M/s cycles		
<b>IP RATING</b>	IP 52 - IP 62 - IP 65		

## IDENTIFICATION CODE

	H	X	7	5	2	2	0	V	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

H	Ø eq = 1.8 mm
B	Ø eq = 2.6 mm
M	Ø eq = 3.0 mm (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

2	2 Controls
4	4 Controls
8	8 Controls
C	4 Controls / Integrated diodes with common 0 V
D	8 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12 / 24 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65 (only 4 and 8 controls)

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**OUTLETS**

2	2 Outlets
---	-----------

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

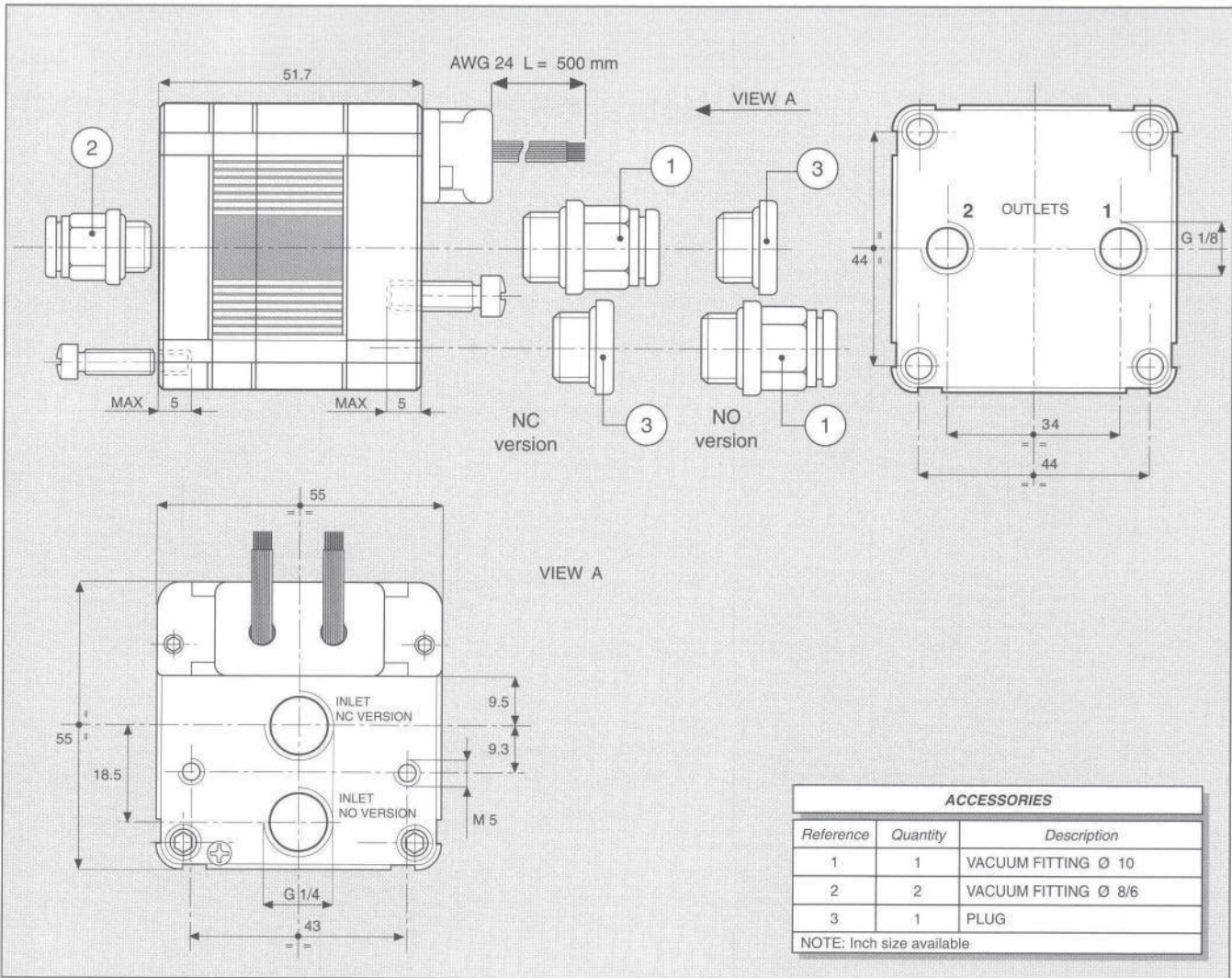
12	12 VDC ± 10 %	ED 100 %	1.4 + 5.8W
24	24 VDC ± 10 %	ED 100 %	1.2 + 5.0W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 + 7.6W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

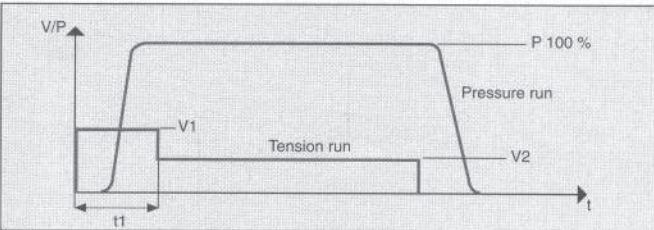
**OPERATING PRESSURE**

	<b>RANGE</b>	<b>MODELS</b>
V	10 <sup>-5</sup> Torr	All





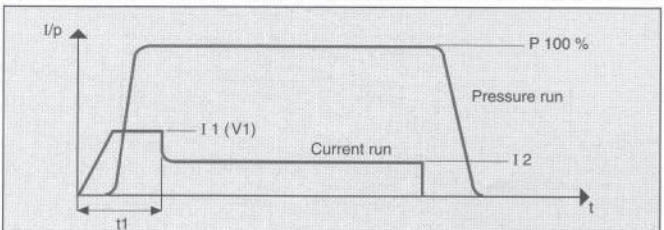
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



N.B. KK MODELS ARE CONTROLLED IN TENSION

V 1 = 24 VDC      t 1 = 2 ms      V 2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



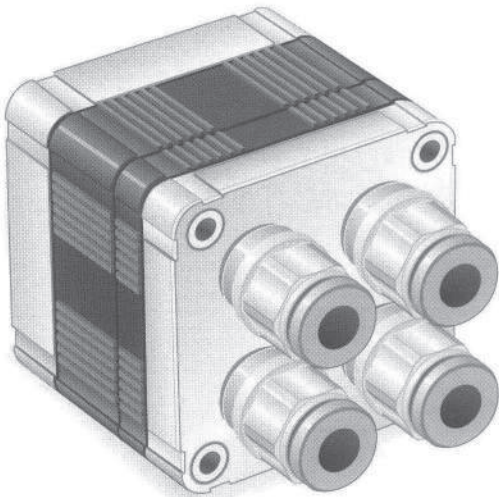
N.B. XX MODELS ARE CONTROLLED IN CURRENT

I 1 = 2.8 A      t 1 = 2 ms      I 2 = 1.2 A

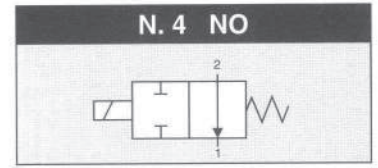
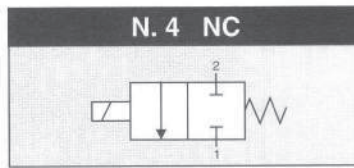
ELECTRICAL PORT CONNECTION

COLOUR	2 CONTROLS (SINGLE CABLES)	2 CONTROLS EASY CONNECTION IP 52	4 CONTROLS (OUTLET)	8 CONTROLS (OUTLET)
BLACK	COMMON	COMMON	COMMON	COMMON
BROWN	1	1	1 (1)	1 (1)
RED	2	—	2 (1)	2 (1)
ORANGE	—	2	3 (2)	3 (1)
YELLOW	—	—	4 (2)	4 (1)
GREEN	—	—	—	5 (2)
BLUE	—	—	—	6 (2)
VIOLET	—	—	—	7 (2)
GREY	—	—	—	8 (2)





CONTROL: DIRECT PFM PNM PWM



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	340 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	4	4	E	V	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

H	Ø eq = 1.3 mm
B	Ø eq = 1.8 mm
M	Ø eq = 2.1 mm (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

4	4 Control
8	8 Control
C	4 Controls / Integrated diodes with common 0 V
D	8 Controls / Integrated diodes with common 0 V
F	4 Controls / Integrated diodes with common 12/24 V
G	8 Controls / Integrated diodes with common 12/24 V

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**OUTLETS**

4	4 Outlets
---	-----------

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

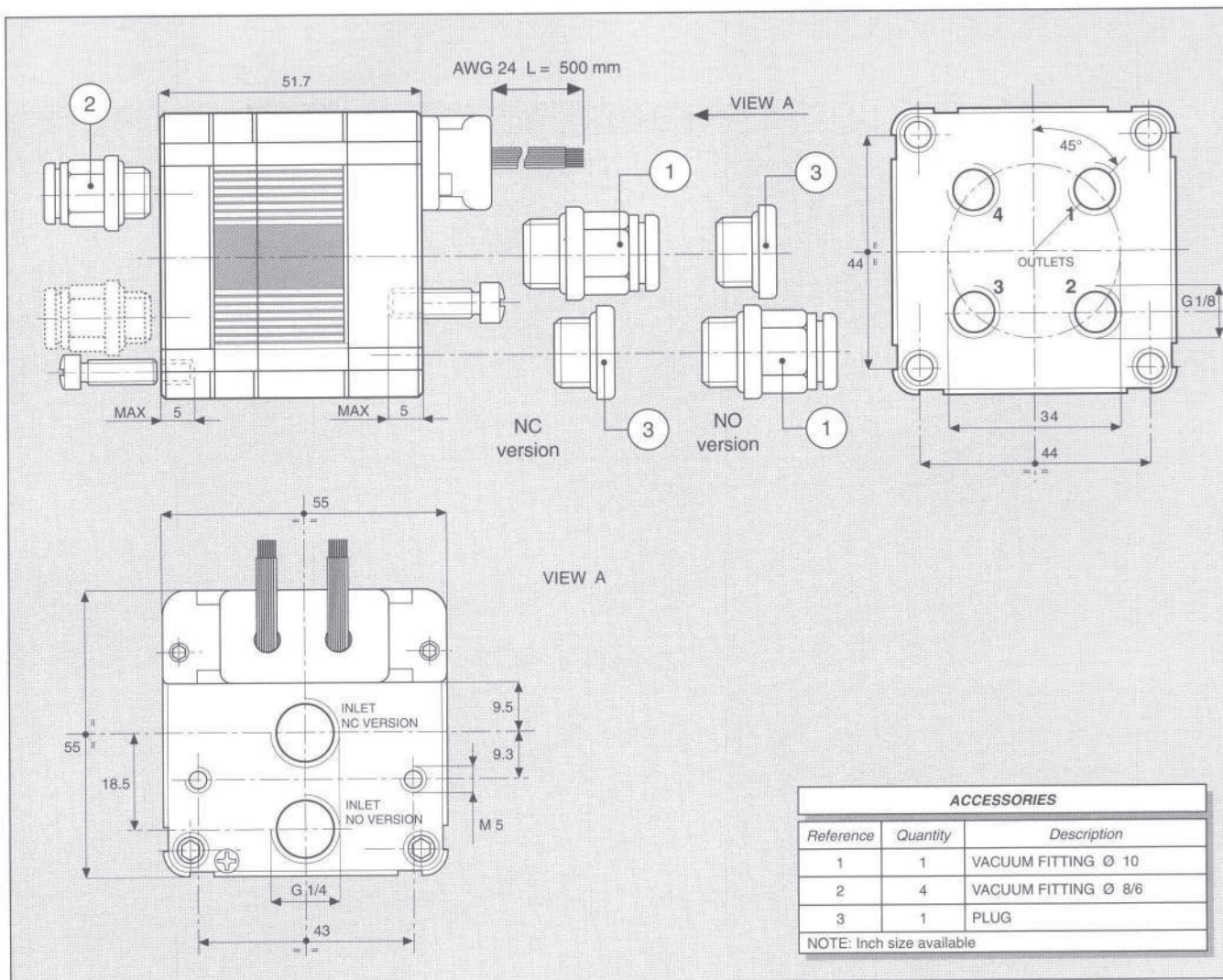
12	12 VDC ± 10 %	ED 100 %	1.4+2.9W
24	24 VDC ± 10 %	ED 100 %	1.2+2.5W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9+3.8W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

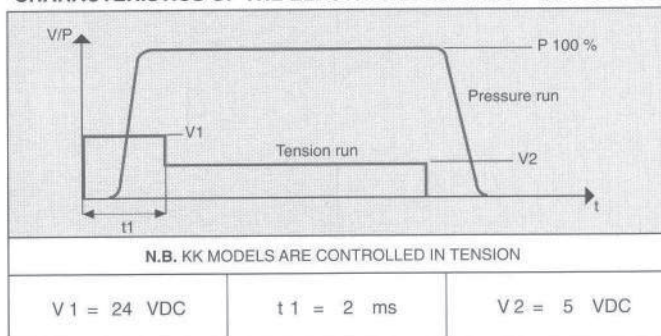
**OPERATING PRESSURE**

	<b>RANGE</b>	<b>MODELS</b>
V	10 <sup>-5</sup> Torr	All

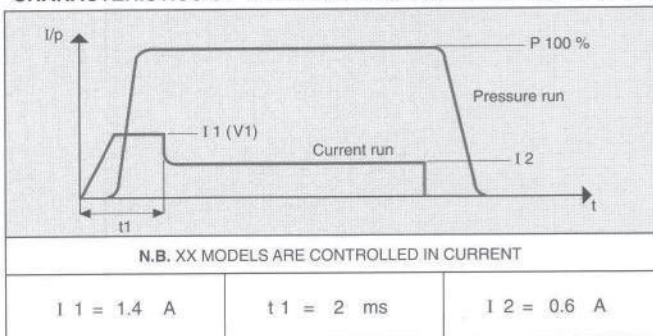




CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



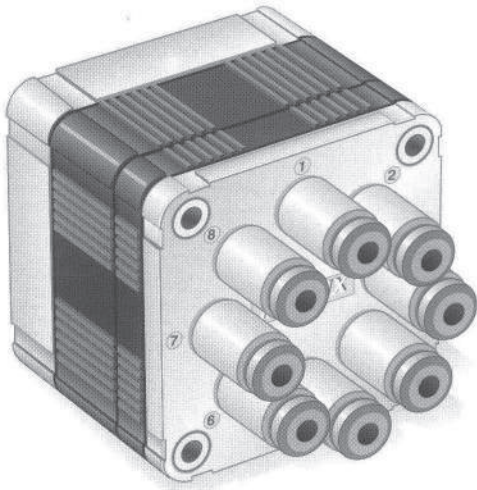
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



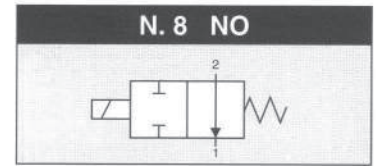
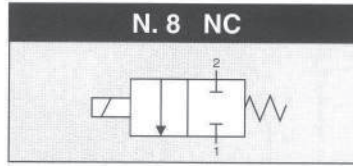
ELECTRICAL PORT CONNECTION

COLOUR	4 CONTROLS	8 CONTROLS (OUTLET)
BLACK	COMMON	COMMON
BROWN	1	1 (1)
RED	2	2 (1)
ORANGE	3	3 (2)
YELLOW	4	4 (2)
GREEN	—	5 (3)
BLUE	—	6 (3)
VIOLET	—	7 (4)
GREY	—	8 (4)





CONTROL: DIRECT PFM PNM PWM



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	350 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	8	8	E	V	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

H	∅ eq = 0.9 mm
B	∅ eq = 1.3 mm
M	∅ eq = 1.5 mm (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

8	8 Control
D	8 Controls / Integrated diodes with common 0 V
G	8 Controls / Integrated diodes with common 12 / 24 V

**OUTLETS**

8	8 Outlets
---	-----------

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

2	2/2
---	-----

**CONTROL TENSION**

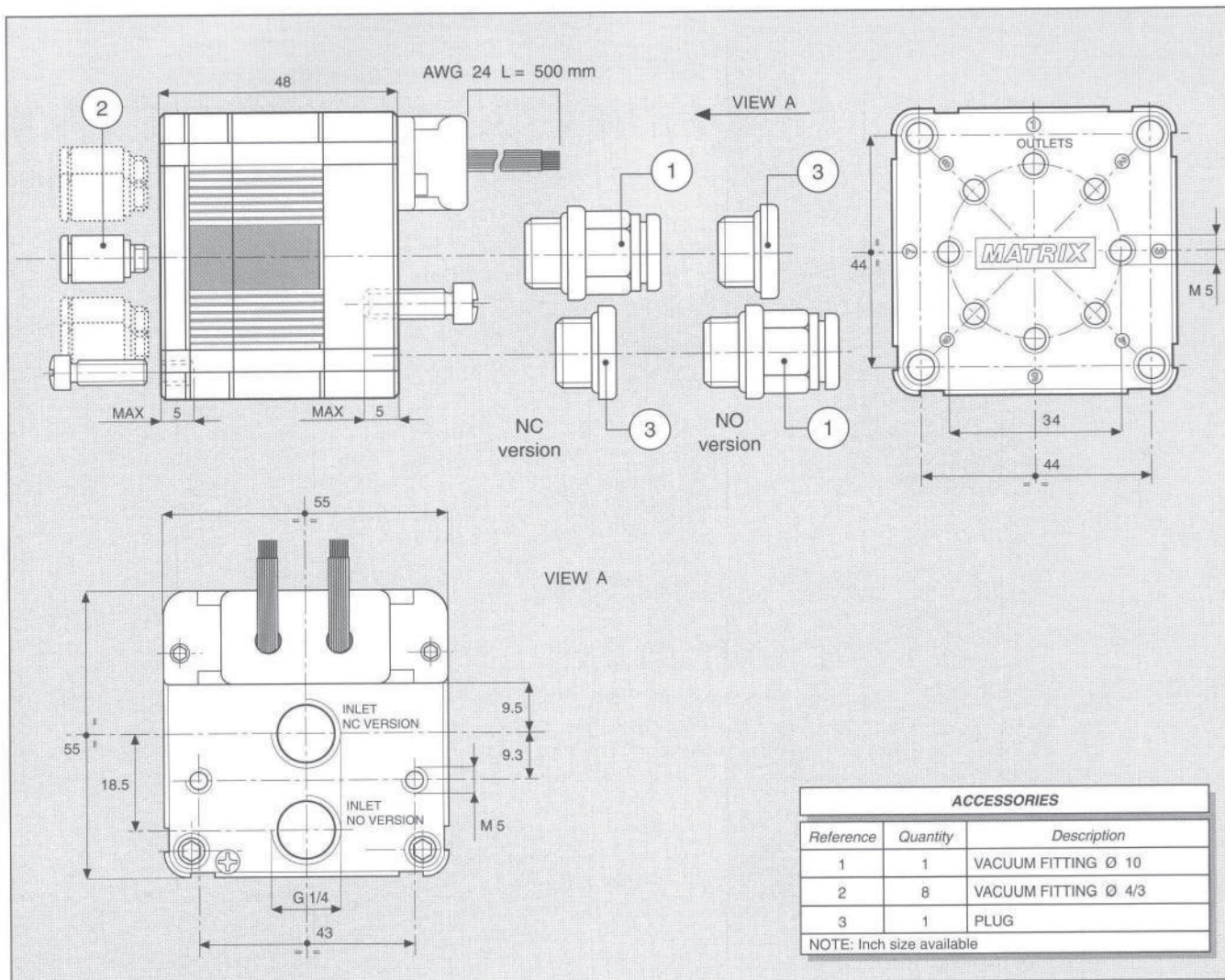
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

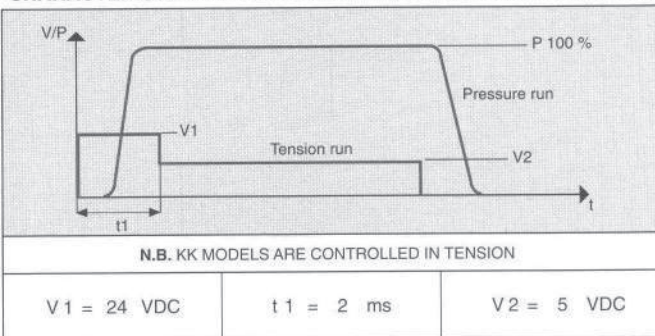
**OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All

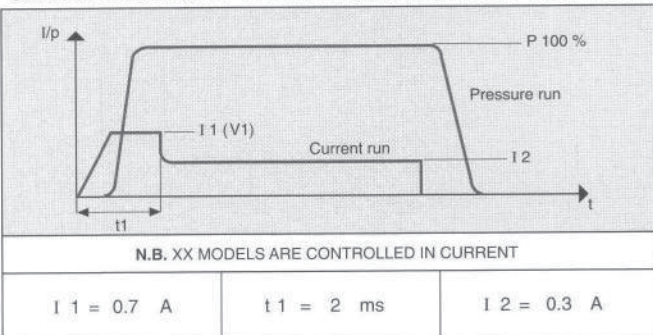




CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



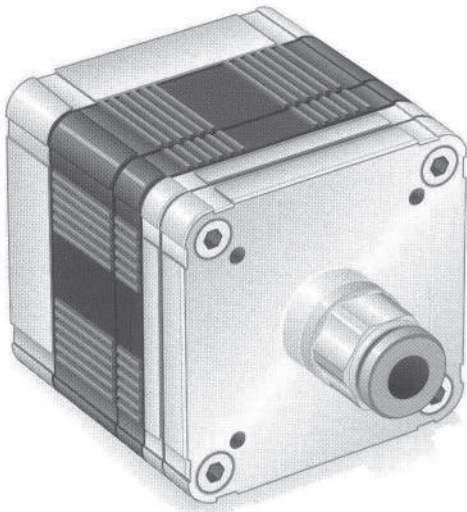
CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



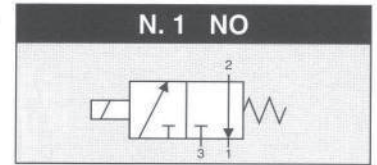
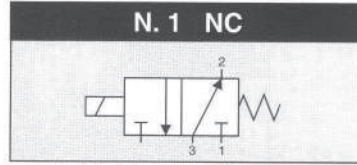
ELECTRICAL PORT CONNECTION

COLOUR	8 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8





CONTROL: **DIRECT**



### 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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	380 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IIP 62		

### IDENTIFICATION CODE

	H	X	7	5	1	1	0	V	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**• ORIFICES**

<b>H</b>	Ø eq = 2.5 mm
<b>B</b>	Ø eq = 3.6 mm
<b>M</b>	Ø eq = 4.2 mm (control tension JJ   XX   KK )

**• VERSION**

	Standard
<b>H</b>	HNBR Shutters

**• No. ELECTRICAL CONTROLS**

<b>1</b>	1 Control
----------	-----------

**• PORT CONNECTION**

<b>0</b>	Integrated cables IP 62 L = 500 mm
----------	------------------------------------

**• SPECIAL PROTECTIONS**

<b>M</b>	Stainless steel (INOX) flanges
<b>N</b>	EPOX BLACK varnished flanges

**• OUTLETS**

<b>1</b>	1 Outlet
----------	----------

**• FUNCTION**

<b>A</b>	NO
<b>C</b>	NC

**• TYPE**

<b>3</b>	3/2
----------	-----

**• CONTROL TENSION**

<b>12</b>	12 VDC ± 10 %	ED 100 %	11.6 W
<b>24</b>	24 VDC ± 10 %	ED 100 %	10.0 W
<b>JJ</b>	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	15.2 W
<b>XX</b>	Speed-up in current	ED 100 % <sup>(1)</sup>	—
<b>KK</b>	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

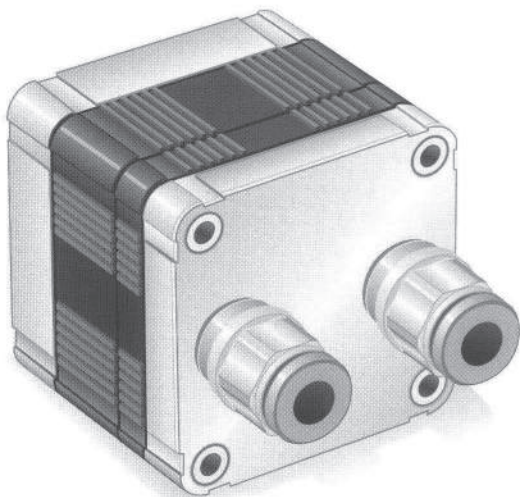
**• OPERATING PRESSURE**

	RANGE	MODELS
<b>V</b>	10 <sup>-5</sup> Torr	All

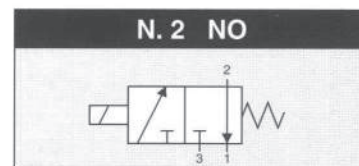
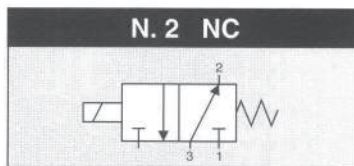








CONTROL: **DIRECT**



### 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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	330 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62		

### IDENTIFICATION CODE

	H	X	7	5	2	2	0	V	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

H	∅ eq = 1.8 mm
B	∅ eq = 2.6 mm
M	∅ eq = 3.0 mm (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

2	2 Control
---	-----------

**OUTLETS**

2	2 Outlets
---	-----------

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52

**FUNCTION**

A	NO
C	NC

**TYPE**

3	3/2
---	-----

**CONTROL TENSION**

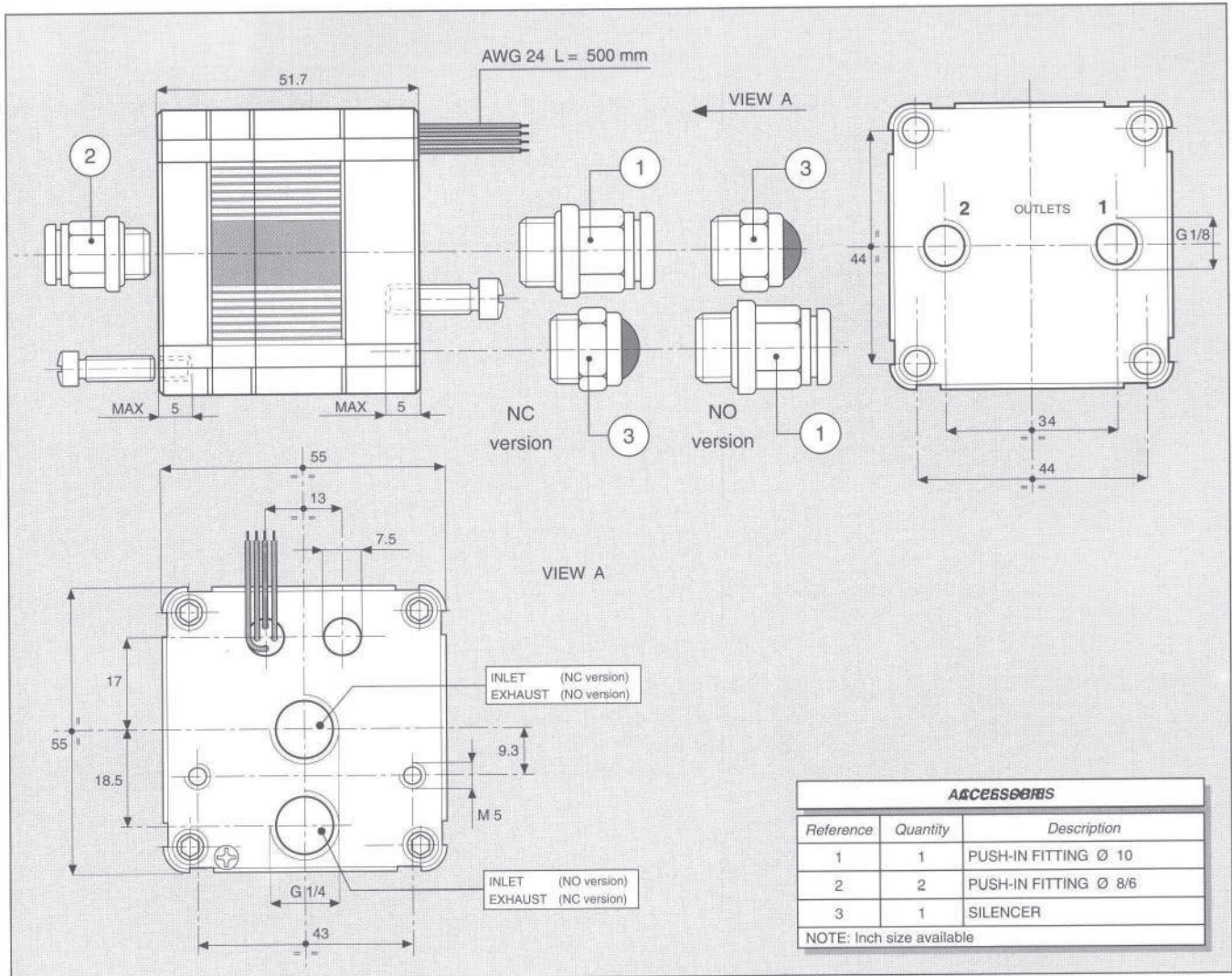
12	12 VDC ± 10 %	ED 100 %	5.8 W
24	24 VDC ± 10 %	ED 100 %	5.0 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	7.6 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

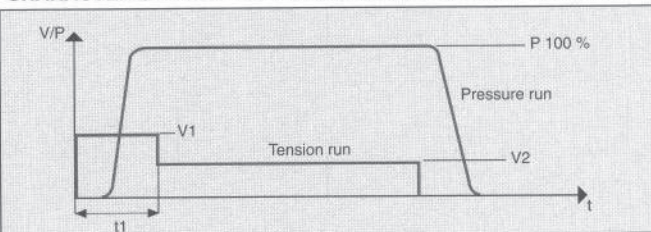
**OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All





CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



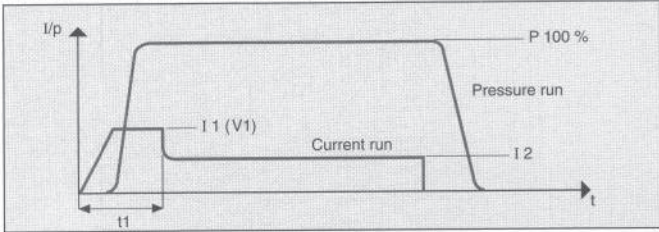
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 ms

V2 = 5 VDC

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX



N.B. XX MODELS ARE CONTROLLED IN CURRENT

I1 = 2.8 A

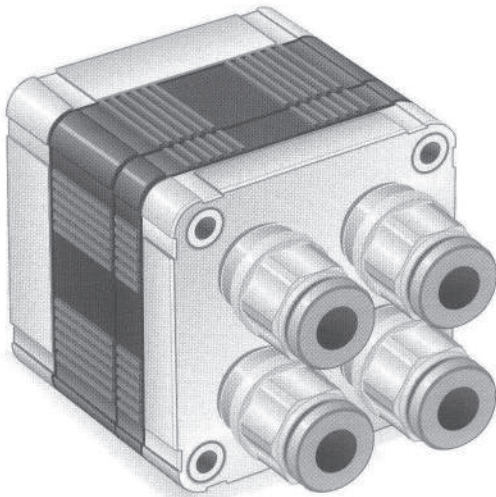
t1 = 2 ms

I2 = 1.2 A

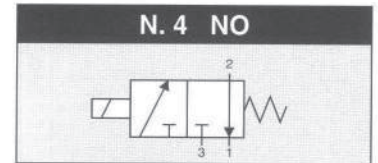
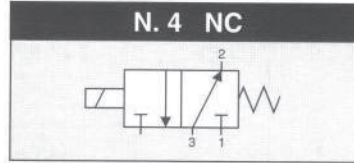
ELECTRICAL PORT CONNECTION

COLOUR	2 CONTROL (SINGLE CABLES)	2 CONTROL EASY CONNECTION IP 52
BLACK	COMMON	COMMON
BROWN	1	1
RED	2	—
ORANGE	—	2





CONTROL: **DIRECT**



### 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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	340 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

### IDENTIFICATION CODE

	H	X	7	5	4	4	E	V	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

<b>H</b>	Ø eq = 1.3 mm
<b>B</b>	Ø eq = 1.8 mm
<b>M</b>	Ø eq = 2.1 mm (control tension JJ XX KK)

**VERSION**

	Standard
<b>H</b>	HNBR Shutters

**No. ELECTRICAL CONTROLS**

<b>4</b>	4 Controls
<b>C</b>	4 Controls / Integrated diodes with common 0 V
<b>F</b>	4 Controls / Integrated diodes with common 12 / 24 V

**PORT CONNECTION**

<b>0</b>	Integrated cables IP 62 L = 500 mm
<b>E</b>	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
<b>M</b>	Stainless steel (INOX) flanges
<b>N</b>	EPOX BLACK varnished flanges

**OUTLETS**

<b>4</b>	4 Outlets
----------	-----------

**FUNCTION**

<b>A</b>	NO
<b>C</b>	NC

**TYPE**

<b>3</b>	3/2
----------	-----

**CONTROL TENSION**

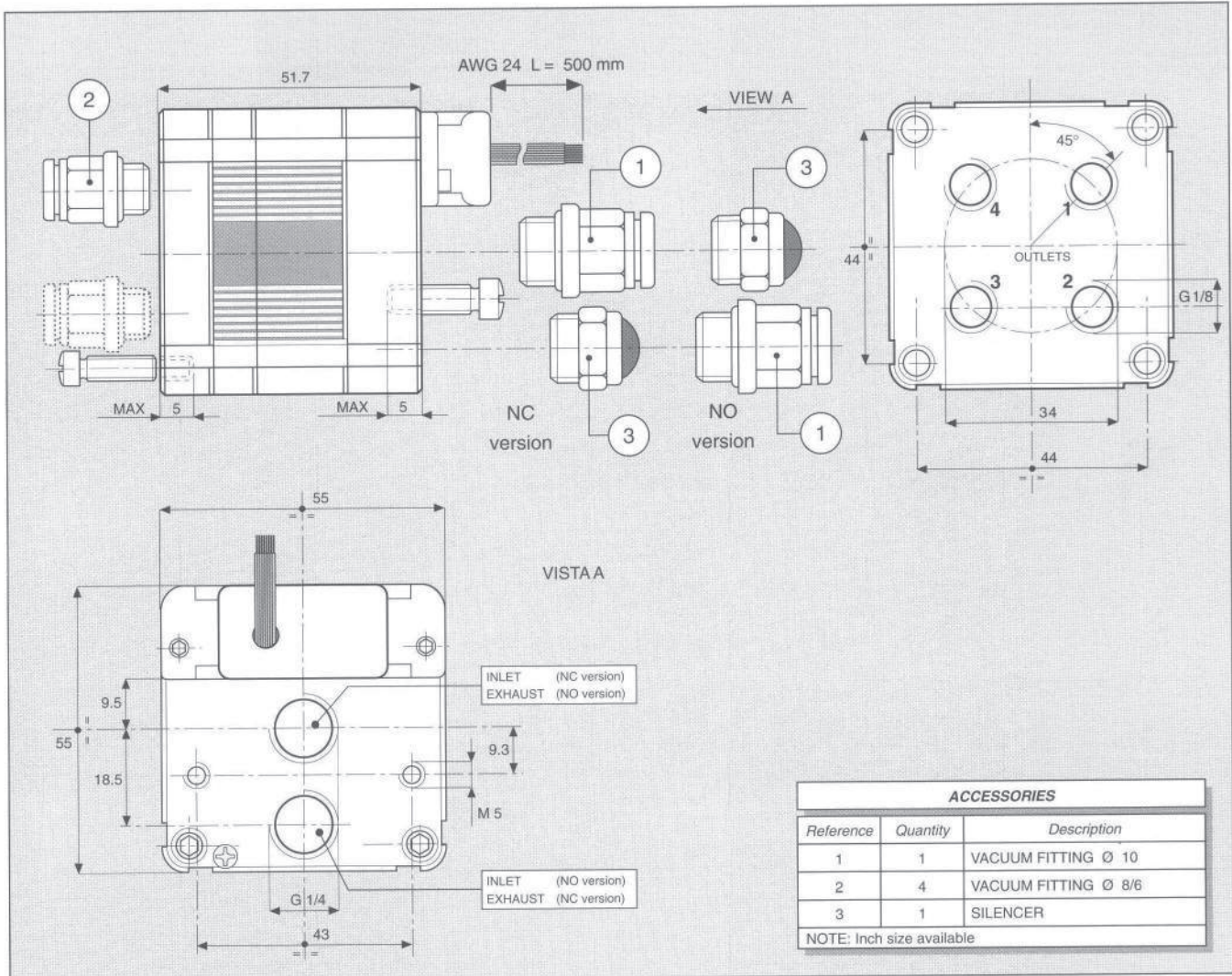
<b>12</b>	12 VDC ± 10 %	ED 100 %	2.9 W
<b>24</b>	24 VDC ± 10 %	ED 100 %	2.5 W
<b>JJ</b>	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	3.8 W
<b>XX</b>	Speed-up in current	ED 100 % <sup>(1)</sup>	—
<b>KK</b>	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

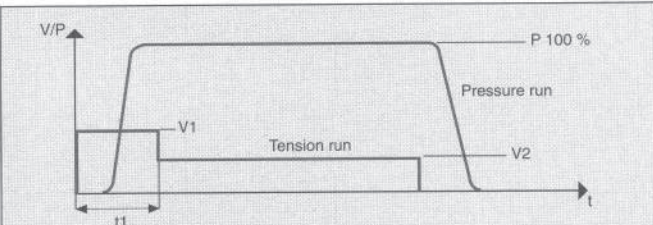
**OPERATING PRESSURE**

	<b>RANGE</b>	<b>MODELS</b>
<b>V</b>	10 <sup>-5</sup> Torr	All





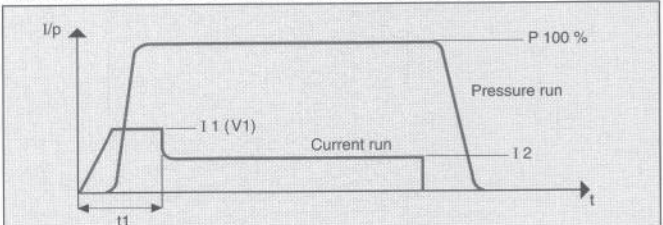
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC      t1 = 2 ms      V2 = 5 VDC

**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX**



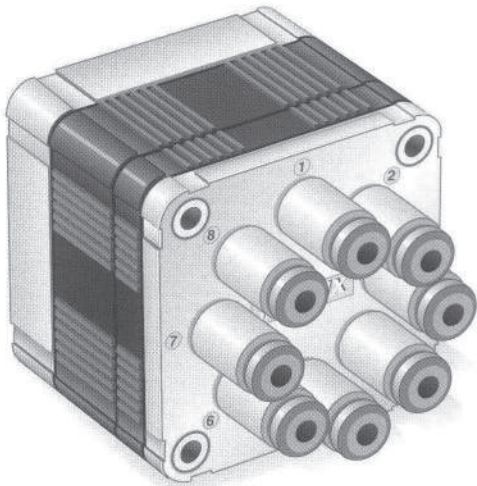
N.B. XX MODELS ARE CONTROLLED IN CURRENT

I1 = 1.4 A      t1 = 2 ms      I2 = 0.6 A

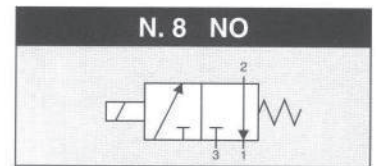
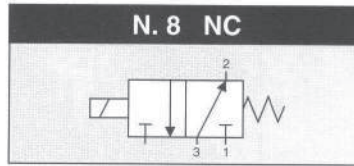
**ELECTRICAL PORT CONNECTION**

COLOUR	4 CONTROL
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4





CONTROL: DIRECT



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	350 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	8	8	E	V	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**• ORIFICES**

H	Ø eq = 0.9 mm
B	Ø eq = 1.3 mm
M	Ø eq = 1.5 mm (control tension JJ XX KK)

**• VERSION**

	Standard
H	HNBR Shutters

**• No. ELECTRICAL CONTROLS**

8	8 Controls
D	8 Controls / Integrated diodes with common 0 V
G	8 Controls / Integrated diodes with common 12/24 V

**• PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**• SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**• OUTLETS**

8	8 Outlets
---	-----------

**• FUNCTION**

A	NO
C	NC

**• TYPE**

3	3/2
---	-----

**• CONTROL TENSION**

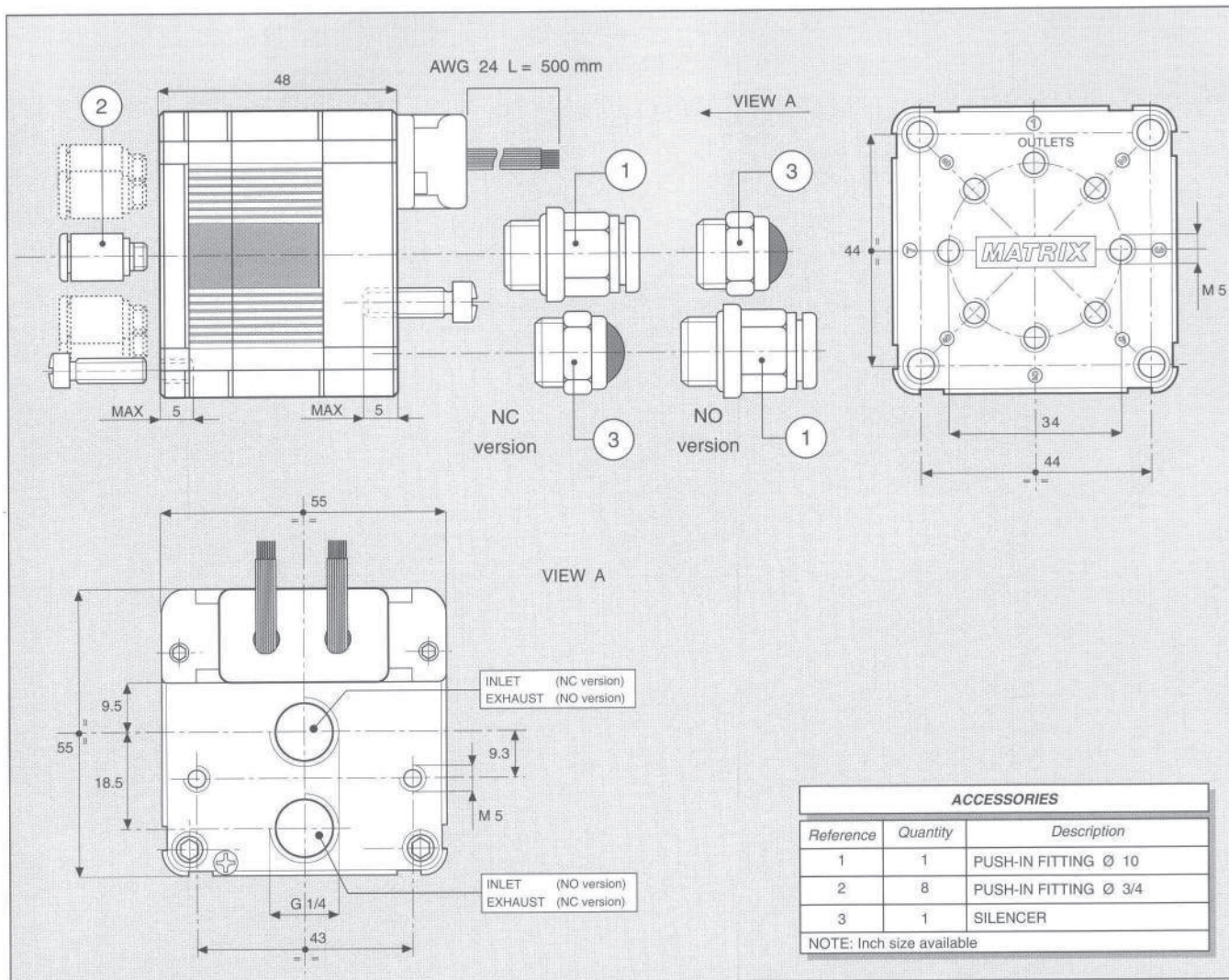
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

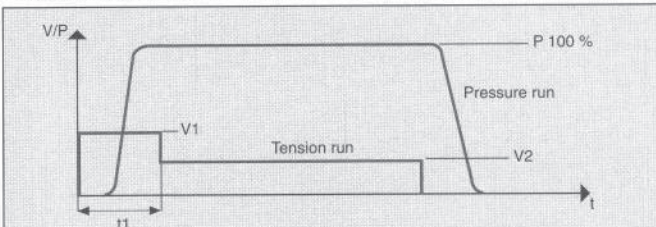
**• OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All





CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK



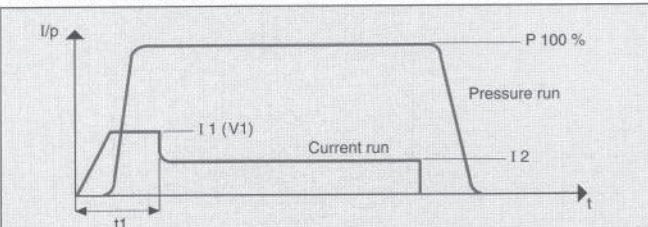
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 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

ELECTRICAL PORT CONNECTION

COLOUR	8 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8



# ACCESSORIES

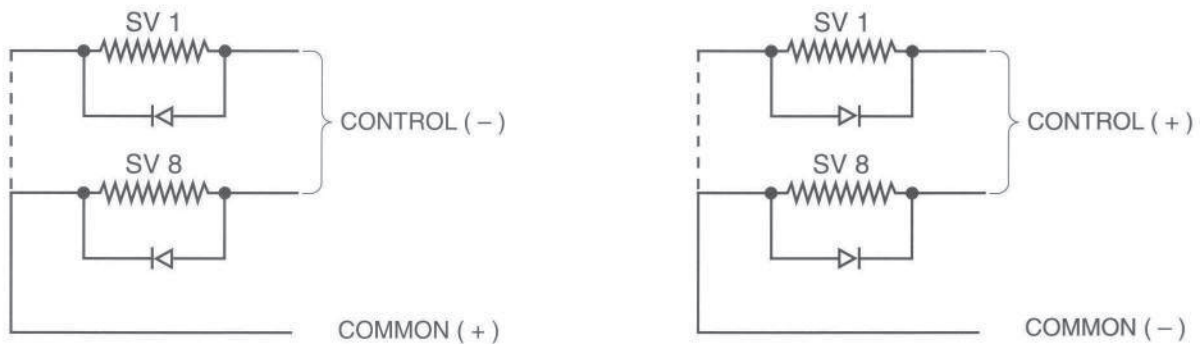
## Integrated anti-disturbance diodes (surge voltage suppressor) 750 Series

When you interrupt feeding in an inductive circuit, the magnetic energy stored in the core zeroes. In the spire of the coil, this variation produces a contro-electromotor force, the polarity of which is inverse to that of feeding. In some cases the peak-value of this induced tension can result high and cause electromagnetic disturbance. It can also affect negatively the integrity of the driver and the insulation of the coil itself. The use of anti-disturbance diodes eliminates these phenomena.

### Marginal note

Anti-disturbance diodes limit the maximum operative frequency of solenoid valves to 50 Hz.

*Electrical scheme. Diode disposition according to control typology.*



### Models available with anti-disturbance diodes

Almost all 750 series models in the catalogue can be equipped with anti-disturbance diodes which are integrated in the valve.

In this series single control models and all speed-up control versions are an exception.

### How to order solenoid valves with anti-disturbance diodes. Control typologies

**H X 7 5 8 C E 2 C 3 24**

#### • N. ELECTRICAL CONTROLS

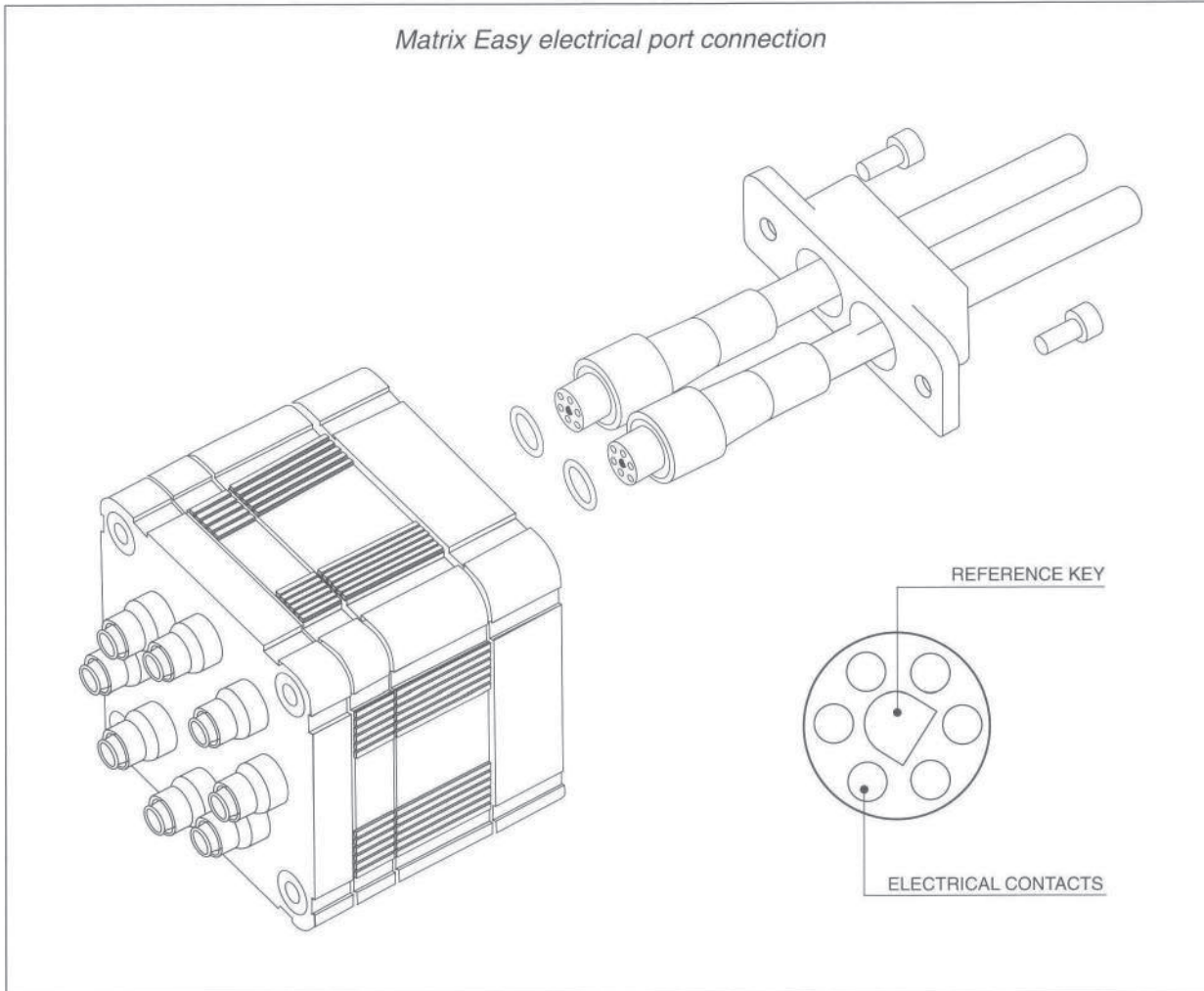
<b>C</b>	4 Controls / Integrated diodes with common 0 Volt
<b>D</b>	8 Controls / Integrated diodes with common 0 Volt
<b>F</b>	4 Controls / Integrated diodes with common 12/24 Volt
<b>G</b>	8 Controls / Integrated diodes with common 12/24 Volt



## Matrix Easy electrical port connection - 750 Series

Matrix Easy port connection is suitable to use a wide range of cables which are expressly developed for 750 Series and it allows to obtain different levels of protection according to CEI EN 60947 and CEI 60529 norms.

The port connection also allows a significant simplification of electrical connections, it is consistent with 750 Series manifold and it can interface with expansion modules of this series.



### Models available with Matrix Easy electrical port connection

750 Series models can be equipped with Matrix Easy electrical port connection (6 poles with reference key).

### How to order solenoid valves with Matrix Easy electrical port connection.

**H X 7 5 8 8 E 2 C 3 24**

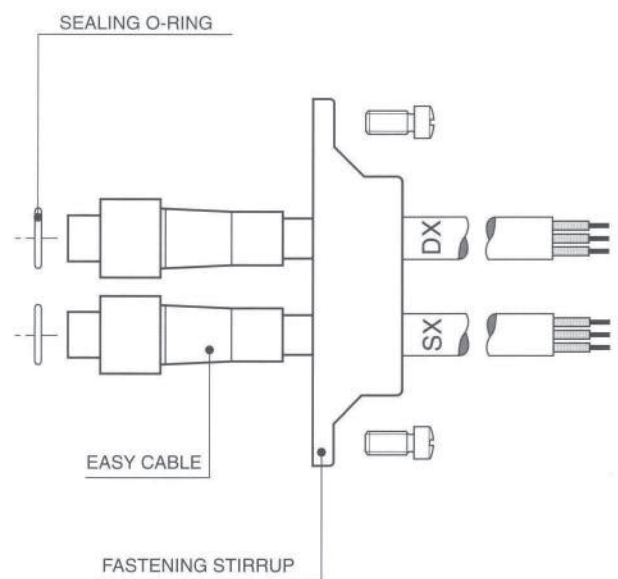
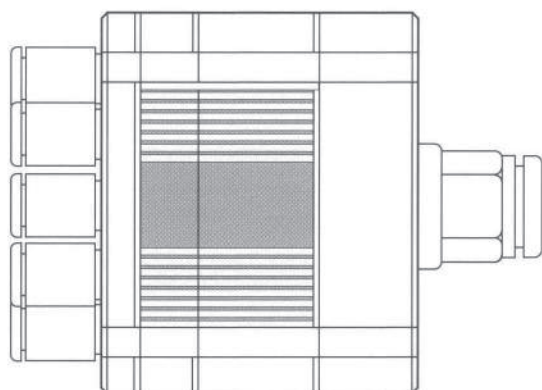
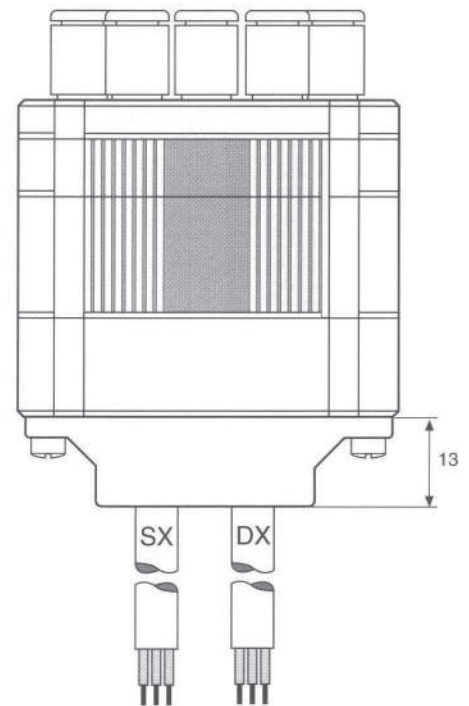
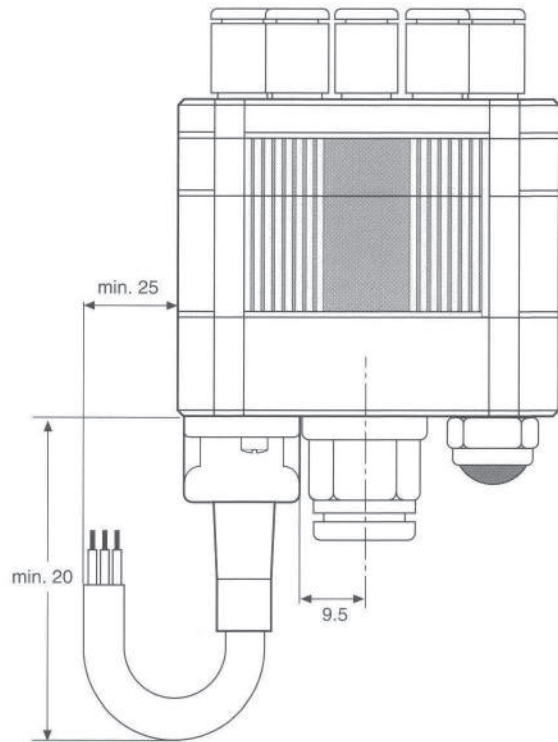
• **PORT CONNECTION**

**E** Presetting for Easy connection IP 52 - IP 65



# ACCESSORIES

## Matrix Easy electrical port connection - 750 Series





## Easy IP 65 port connection cables - 750 Series

Protection rate means the intrinsic capability of electrical equipment under tension to protect and protect itself against solid bodies and water. Such protection rate is identified with the IP abbreviation followed by 2 numbers whose relative definition is established by CEI EN 60947 and CEI 60529 norms. The first number, from 0 to 6, classifies the protection against solid bodies, the second one, from 0 to 8, the protection against water.

Protection rates of Easy IP 65 port connection cables follow:

### Protection rate of coverings against solid bodies and water.

6	Totally protected against dust	Dust penetration is not admitted
5	Protected against water jets	Water jets thrown on the covering from all directions, must not cause damaging effects.

### Models available with IP 65 port connection cables

750 Series models come with Matrix Easy port connection and can be equipped with IP 65 cables.

### Characteristics of IP 65 cable - UL 1581 and UL 758 norms

Type of port connection on valve	Matrix Easy 6 poles
Cable diameter	6.5 mm
Maximum temperature use	105° C for PVC - Class 43 (Style 2517) 80° C for polyurethane (Style 20235)
Insulation	300 Volt
Resistance against oil	ASTM 2 at 60° C

### How to order IP 65 port connection cables - Length and endings (see following page)

Cables come with assembly kit composed of fastening stirrup, fastening screws and sealing O-rings.  
For 4 electrical-control valves the kit is composed of a single cable.  
For 8 electrical-control valves the kit is composed of two cables.



# ACCESSORIES

## 1.1 Ending with soldered threads cable - 4 electrical-control valves (1 cable)

Cable length	PVC	POLYURETHANE
1.000 mm	cod. 868.851 J	-----
2.000 mm	cod. 868.854 M	cod. 868.883 P
3.000 mm	cod. 868.855 N	-----
4.000 mm	-----	cod. 868.884 Q

## 1.2 Ending with soldered threads cable - 8 electrical-control valves (2 cables)

Cable length	PVC	POLYURETHANE
1.000 mm	cod. 868.850 I	-----
2.000 mm	cod. 868.852 K	cod. 868.885 R
3.000 mm	cod. 868.853 L	-----
4.000 mm	-----	cod. 868.886 S

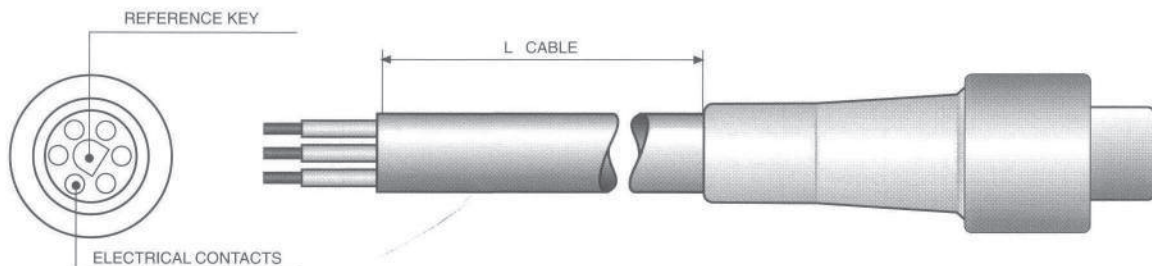
## 2.1 Ending with Sub-D 15 poles connector - 4 electrical-control valves (2 cables)

Cable length	PVC	
1.000 mm	cod. 868.858 Q	
2.000 mm	cod. 868.859 R	
3.000 mm	cod. 868.861 T	

## 2.2 Ending with Sub D 15 poles connector - 8 electrical-control valves (2 cables)

Cable length	PVC	
1.000 mm	cod. 868.856 O	
2.000 mm	cod. 868.857 P	
3.000 mm	cod. 868.860 S	

Easy IP 65 port connection cables (IP protection according to CEI EN 60947 and CEI 60529 norms)





## Easy IP 52 port connection cables - 750 Series

This series guarantees an IP 52 protection level according to CEI EN 60947 and CEI 60529 norms and it is consistent with all 750 Series models that come with Matrix Easy port connection.

Protection rates of Easy IP 52 port connection cables follow:

### Protection rate of coverings against solid bodies and water

5	Protected against dust	Dust penetration is not totally excluded but dust must not penetrate in such a quantity that could damage the good working of the equipment or jeopardise its safety.
2	Protected against vertical fall of water drops with an inclination of the covering until 15°.	The water drops which fall vertically must not cause damaging effects when the covering is inclined until 15° in comparison with its vertical position.

### Characteristics of IP 52 cable - UL 1569 norms

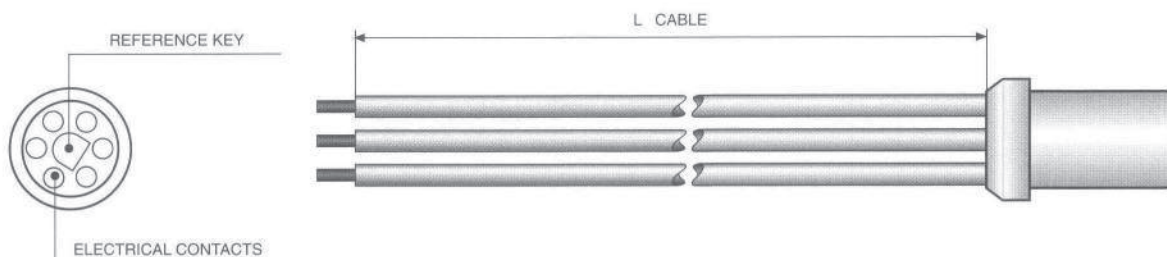
Type of port connection on valve	Matrix Easy 6 poles
Threads diameter	1.4 mm
Conductor diameter	AWG 24
Maximum temperature use	105° C
Insulation	300 Volt
Covering threads	PVC (polyvinyl chloride)

### How to order Easy IP 52 port connection cables - Available lengths

#### Ending with soldered threads cable - 2, 4 and 8 electrical control valves

Cable length	2 Controls	4 Controls	8 Controls
500 mm	cod. 868.870 C	cod. 868.871 D	cod. 868.872 E
1.000 mm	cod. 868.873 F	cod. 868.875 H	cod. 868.877 J
2.000 mm	cod. 868.874 G	cod. 868.876 I	cod. 868.878 K
3.000 mm	cod. 868.845 D	cod. 868.880 M	cod. 868.881 N

Easy IP 52 port connection cable (IP protection according to CEI EN 60947 and CEI 60529 norms)





# ACCESSORIES

## Manifold - 750 Series

Manifolds for multiple installing represent a fast and safe system of fastening and connection for all 750 Series models.

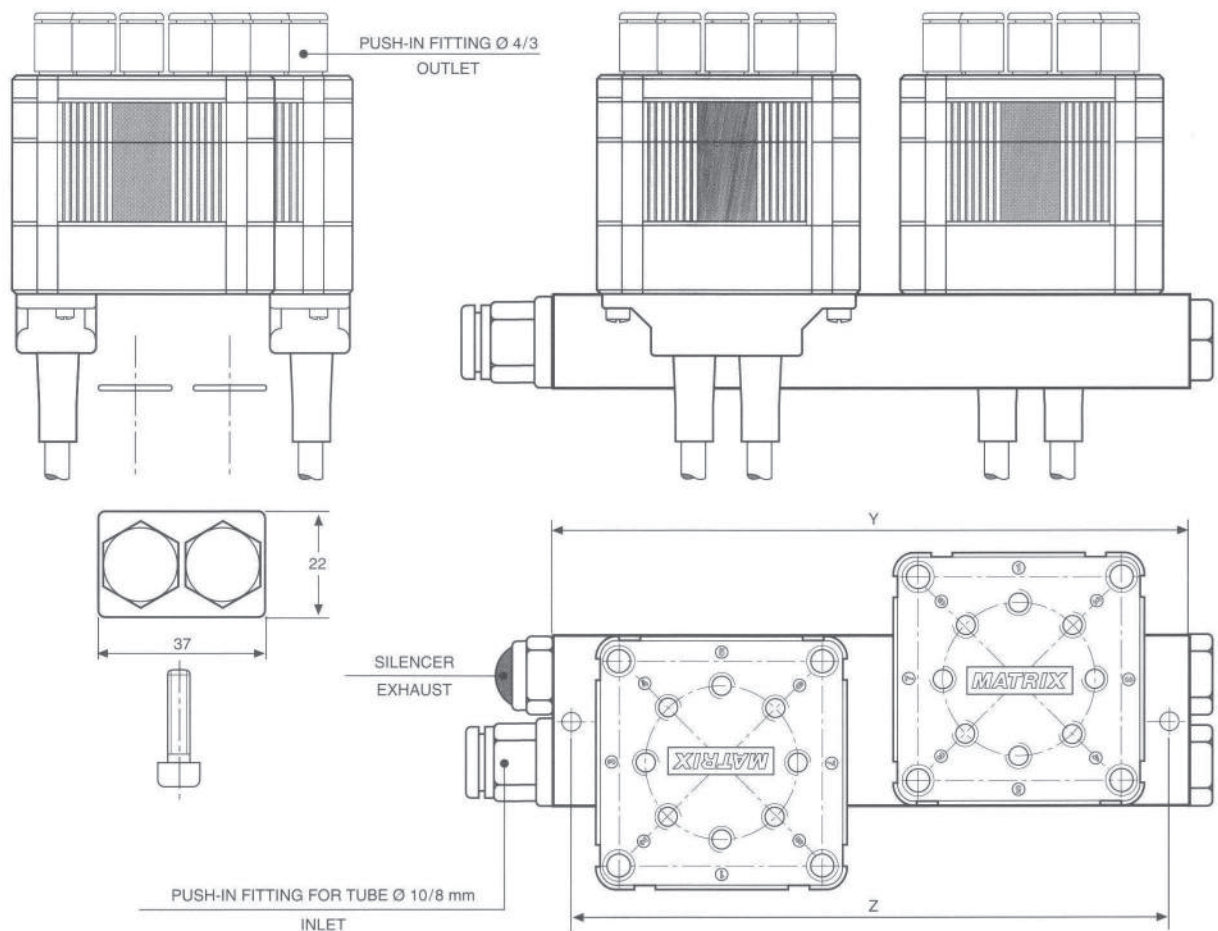
They are suitable for the rationalisation of complex pneumatic systems thanks to their simplicity of the assembly and their total modularity.

Manifolds are available for patterns from 2 to 8 solenoid valves of 750 series and are consistent with Matrix Easy electrical port connection and cables. They come in kit with fastening screws, push-in fittings and sealing O-Rings.

### How to order Manifolds - Available patterns

Pattern	Kid code	Y ( mm )	Z ( mm )
no. 2 Solenoid valves	868.950 E	140	130
no. 3 Solenoid valves	868.951 F	195	65
no. 4 Solenoid valves	868.952 G	260	130
no. 5 Solenoid valves	868.953 H	325	195
no. 6 Solenoid valves	868.954 I	390	260
no. 7 Solenoid valves	868.955 J	455	325
no. 8 Solenoid valves	868.956 K	520	390

2 position manifold. Assembly example of a 750 NC model and a 750 NO model

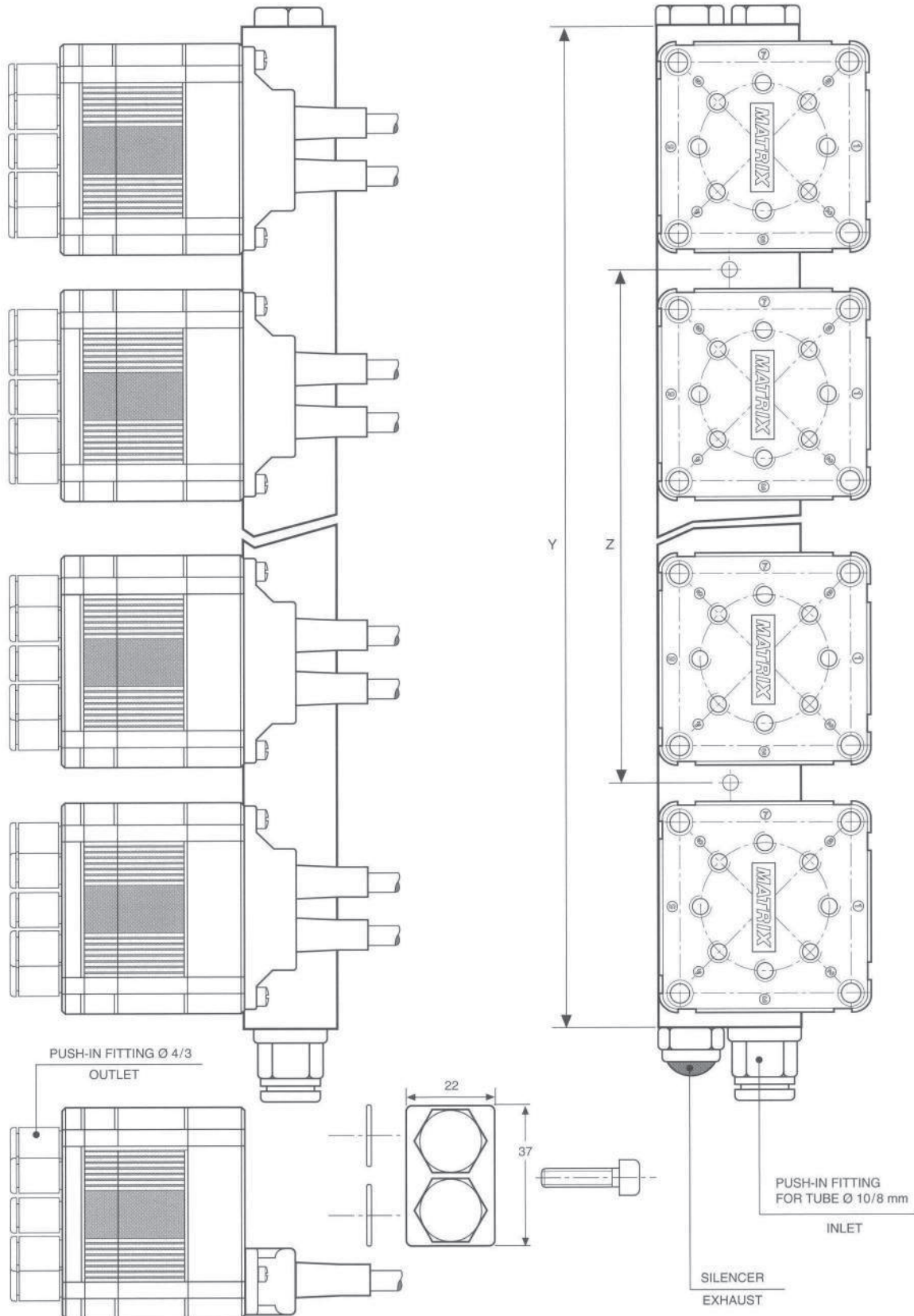




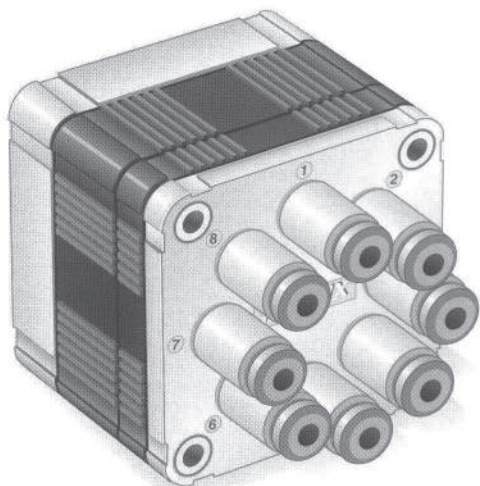
## Manifold - 750 Series

3,4,5,6,7,8 position manifolds.

See previous scheme for Y and Z dimensions and relative ordering codes.



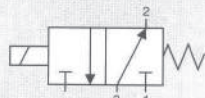




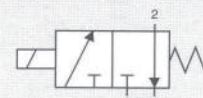
CONTROL:

DIRECT

N. 8 NC



N. 8 NO



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	12 / 24 < 7 ms	JJ < 5 ms	XX / KK < 2 ms
RESPONSE TIME IN CLOSING	12 / 24 < 3 ms	JJ < 2 ms	XX / KK < 2 ms
MAXIMUM FREQUENCY	100 Hz	200 Hz	300 Hz
WEIGHT	350 g		
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles		
IP RATING	IP 52 - IP 62 - IP 65		

IDENTIFICATION CODE

	H	X	7	5	8	8	E	V	C	3	24
--	---	---	---	---	---	---	---	---	---	---	----

**ORIFICES**

H	Ø eq = 0.9 mm
B	Ø eq = 1.3 mm
M	Ø eq = 1.5 mm (control tension JJ XX KK)

**VERSION**

	Standard
H	HNBR Shutters

**No. ELECTRICAL CONTROLS**

8	8 Controls
D	8 Controls / Integrated diodes with common 0 V
G	8 Controls / Integrated diodes with common 12/24 V

**OUTLETS**

8	8 Outlets
---	-----------

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
E	Presetting for Easy connection IP 52 - IP 65

**SPECIAL PROTECTIONS**

	Only with EASY IP 65 port connection
M	Stainless steel (INOX) flanges
N	EPOX BLACK varnished flanges

**FUNCTION**

A	NO
C	NC

**TYPE**

3	3/2
---	-----

**CONTROL TENSION**

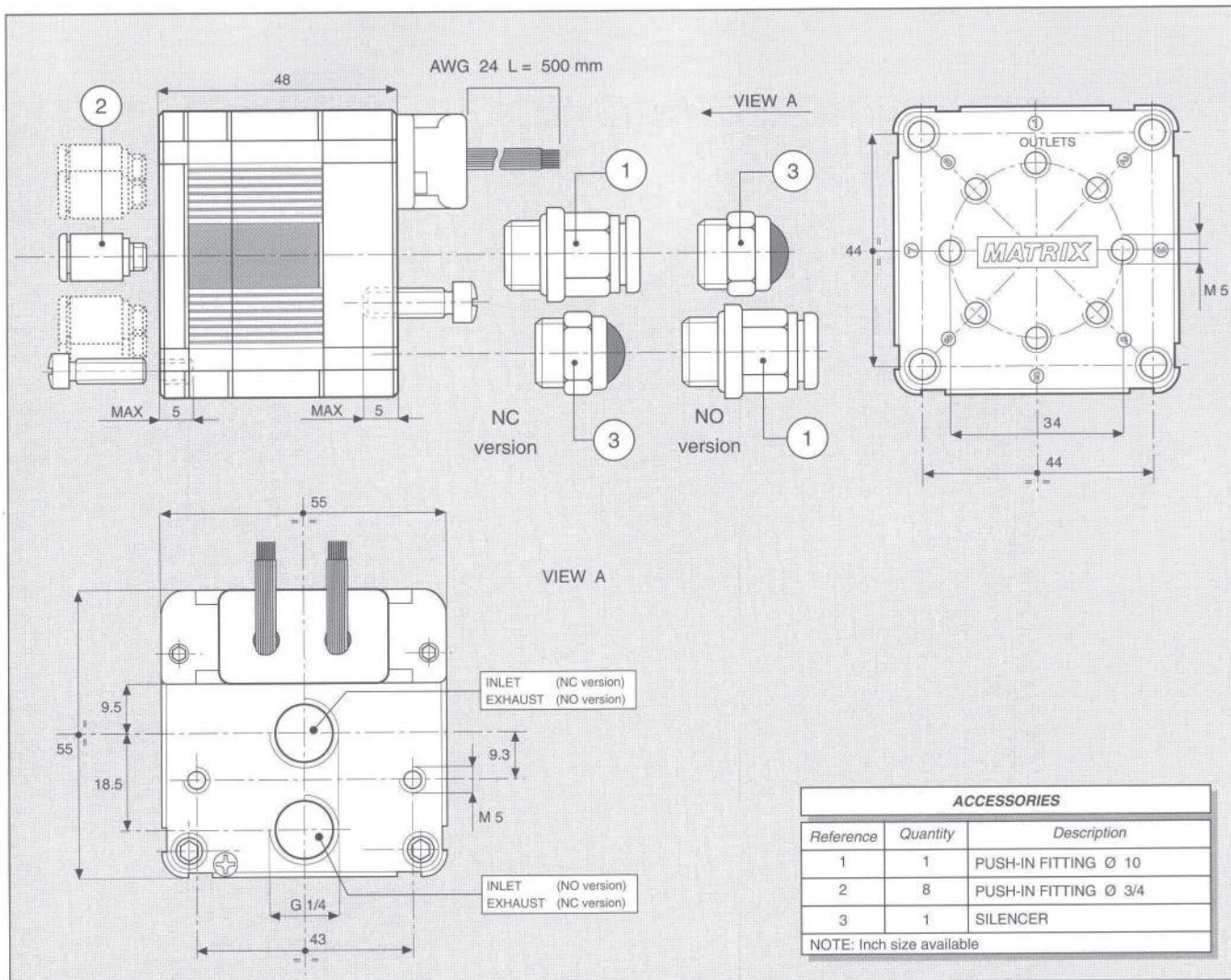
12	12 VDC ± 10 %	ED 100 %	1.4 W
24	24 VDC ± 10 %	ED 100 %	1.2 W
JJ	24 VDC ± 10 %	ED 100 % <sup>(1)</sup>	1.9 W
XX	Speed-up in current	ED 100 % <sup>(1)</sup>	—
KK	Speed-up in tension	ED 100 % <sup>(1)</sup>	—

(1) Only with Electronic Driver Boards PRB or UDB

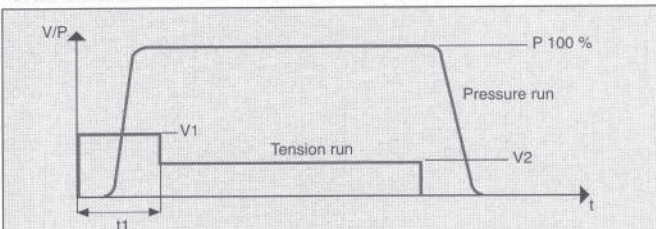
**OPERATING PRESSURE**

	RANGE	MODELS
V	10 <sup>-5</sup> Torr	All





**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



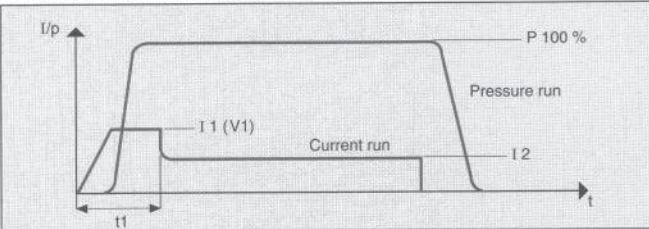
N.B. KK MODELS ARE CONTROLLED IN TENSION

V1 = 24 VDC

t1 = 2 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

**ELECTRICAL PORT CONNECTION**

COLOUR	8 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8



# ACCESSORIES

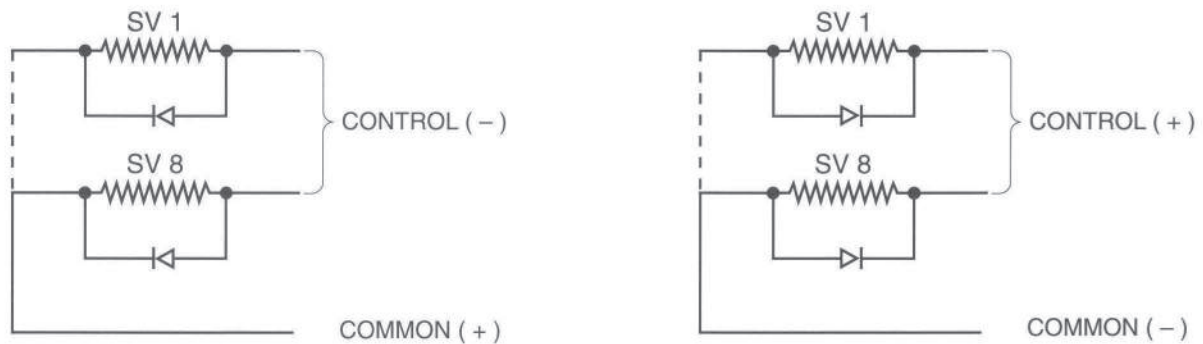
## Integrated anti-disturbance diodes (surge voltage suppressor) 750 Series

When you interrupt feeding in an inductive circuit, the magnetic energy stored in the core zeroes. In the spire of the coil, this variation produces a contro-electromotor force, the polarity of which is inverse to that of feeding. In some cases the peak-value of this induced tension can result high and cause electromagnetic disturbance. It can also affect negatively the integrity of the driver and the insulation of the coil itself. The use of anti-disturbance diodes eliminates these phenomena.

### Marginal note

Anti-disturbance diodes limit the maximum operative frequency of solenoid valves to 50 Hz.

Electrical scheme. Diode disposition according to control typology.



### Models available with anti-disturbance diodes

Almost all 750 series models in the catalogue can be equipped with anti-disturbance diodes which are integrated in the valve.

In this series single control models and all speed-up control versions are an exception.

### How to order solenoid valves with anti-disturbance diodes. Control typologies

**H X 7 5 8 C E 2 C 3 24**

#### • N. ELECTRICAL CONTROLS

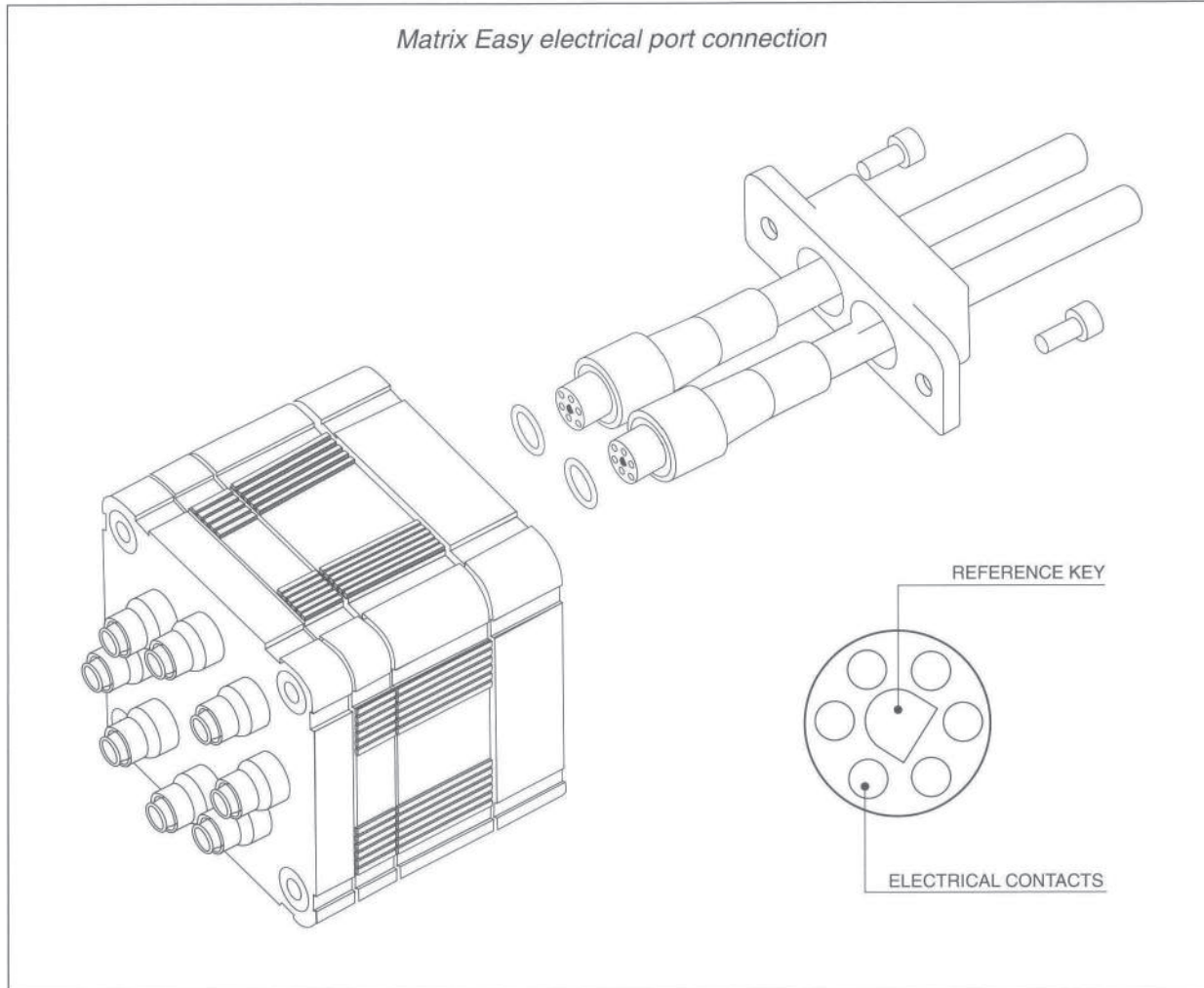
<b>C</b>	4 Controls / Integrated diodes with common 0 Volt
<b>D</b>	8 Controls / Integrated diodes with common 0 Volt
<b>F</b>	4 Controls / Integrated diodes with common 12 / 24 Volt
<b>G</b>	8 Controls / Integrated diodes with common 12 / 24 Volt



## Matrix Easy electrical port connection - 750 Series

Matrix Easy port connection is suitable to use a wide range of cables which are expressly developed for 750 Series and it allows to obtain different levels of protection according to CEI EN 60947 and CEI 60529 norms.

The port connection also allows a significant simplification of electrical connections, it is consistent with 750 Series manifold and it can interface with expansion modules of this series.



### Models available with Matrix Easy electrical port connection

750 Series models can be equipped with Matrix Easy electrical port connection (6 poles with reference key).

### How to order solenoid valves with Matrix Easy electrical port connection.

**H X 7 5 8 8 E 2 C 3 24**

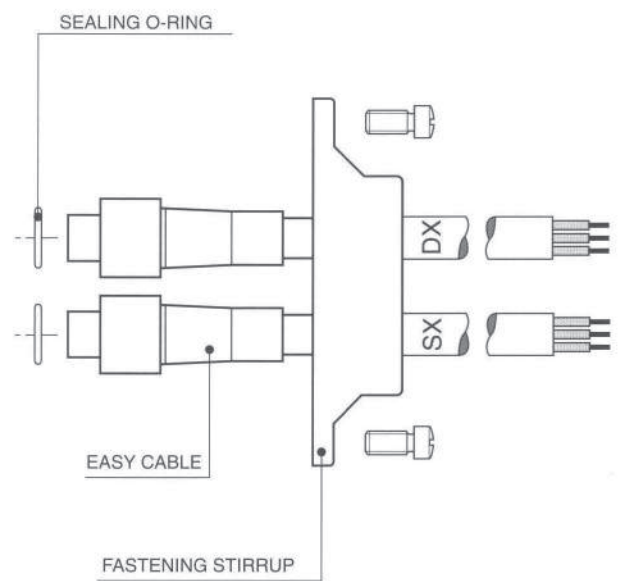
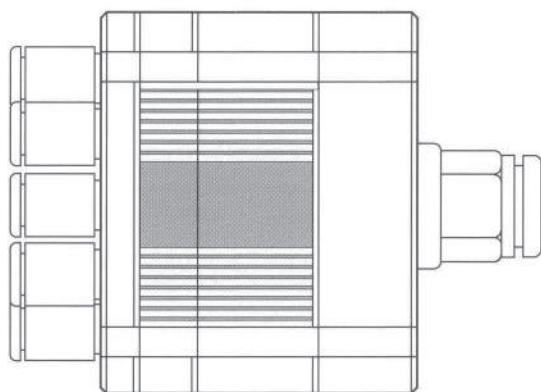
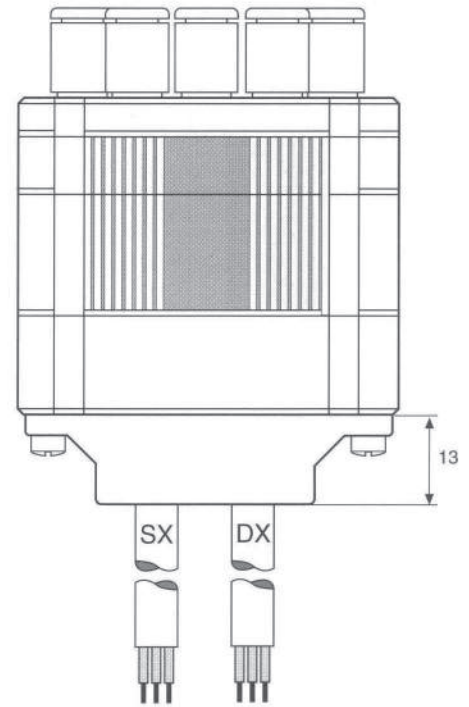
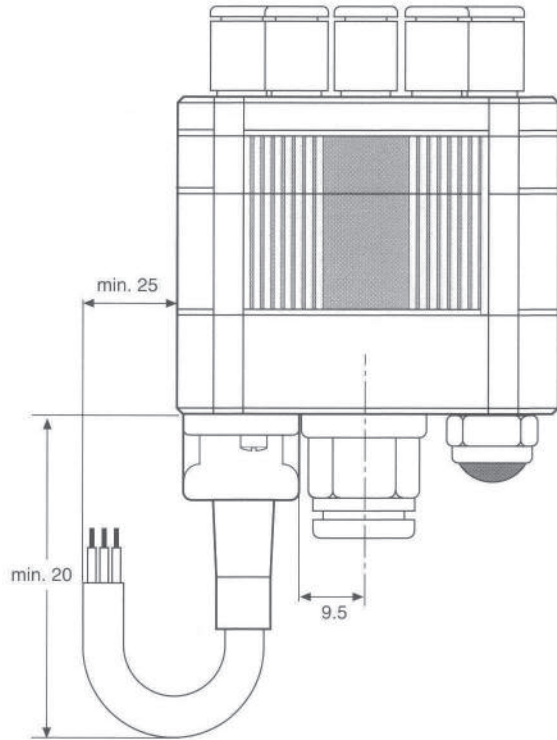
#### • PORT CONNECTION

**E** Presetting for Easy connection IP 52 - IP 65



# ACCESSORIES

## Matrix Easy electrical port connection - 750 Series





## Easy IP 65 port connection cables - 750 Series

Protection rate means the intrinsic capability of electrical equipment under tension to protect and protect itself against solid bodies and water. Such protection rate is identified with the IP abbreviation followed by 2 numbers whose relative definition is established by CEI EN 60947 and CEI 60529 norms. The first number, from 0 to 6, classifies the protection against solid bodies, the second one, from 0 to 8, the protection against water.

Protection rates of Easy IP 65 port connection cables follow:

Protection rate of coverings against solid bodies and water.		
6	Totally protected against dust	Dust penetration is not admitted
5	Protected against water jets	Water jets thrown on the covering from all directions, must not cause damaging effects.

### Models available with IP 65 port connection cables

750 Series models come with Matrix Easy port connection and can be equipped with IP 65 cables.

Characteristics of IP 65 cable - UL 1581 and UL 758 norms	
Type of port connection on valve	Matrix Easy 6 poles
Cable diameter	6.5 mm
Maximum temperature use	105° C for PVC - Class 43 (Style 2517) 80° C for polyurethane (Style 20235)
Insulation	300 Volt
Resistance against oil	ASTM 2 at 60° C

### How to order IP 65 port connection cables - Length and endings (see following page)

Cables come with assembly kit composed of fastening stirrup, fastening screws and sealing O-rings.  
For 4 electrical-control valves the kit is composed of a single cable.  
For 8 electrical-control valves the kit is composed of two cables.



# ACCESSORIES

## 1.1 Ending with soldered threads cable - 4 electrical-control valves (1 cable)

Cable length	PVC	POLYURETHANE
1.000 mm	cod. 868.851 J	— — — —
2.000 mm	cod. 868.854 M	cod. 868.883 P
3.000 mm	cod. 868.855 N	— — — —
4.000 mm	— — — —	cod. 868.884 Q

## 1.2 Ending with soldered threads cable - 8 electrical-control valves (2 cables)

Cable length	PVC	POLYURETHANE
1.000 mm	cod. 868.850 I	— — — —
2.000 mm	cod. 868.852 K	cod. 868.885 R
3.000 mm	cod. 868.853 L	— — — —
4.000 mm	— — — —	cod. 868.886 S

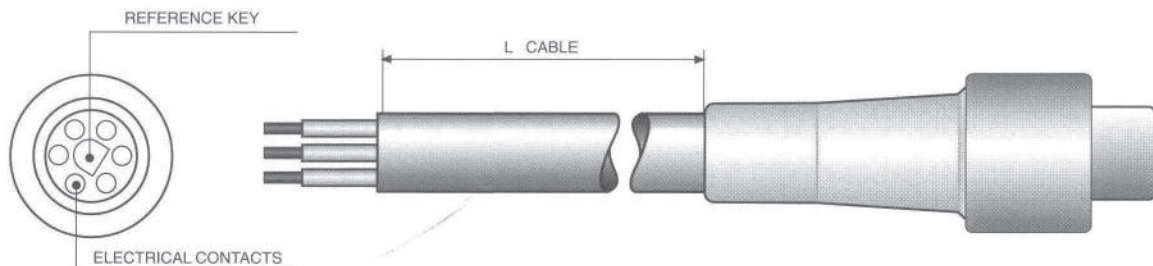
## 2.1 Ending with Sub-D 15 poles connector - 4 electrical-control valves (2 cables)

Cable length	PVC	
1.000 mm	cod. 868.858 Q	
2.000 mm	cod. 868.859 R	
3.000 mm	cod. 868.861 T	

## 2.2 Ending with Sub D 15 poles connector - 8 electrical-control valves (2 cables)

Cable length	PVC	
1.000 mm	cod. 868.856 O	
2.000 mm	cod. 868.857 P	
3.000 mm	cod. 868.860 S	

Easy IP 65 port connection cables (IP protection according to CEI EN 60947 and CEI 60529 norms)





## Easy IP 52 port connection cables - 750 Series

This series guarantees an IP 52 protection level according to CEI EN 60947 and CEI 60529 norms and it is consistent with all 750 Series models that come with Matrix Easy port connection.

Protection rates of Easy IP 52 port connection cables follow:

### Protection rate of coverings against solid bodies and water

5	Protected against dust	Dust penetration is not totally excluded but dust must not penetrate in such a quantity that could damage the good working of the equipment or jeopardise its safety.
2	Protected against vertical fall of water drops with an inclination of the covering until 15°.	The water drops which fall vertically must not cause damaging effects when the covering is inclined until 15° in comparison with its vertical position.

### Characteristics of IP 52 cable - UL 1569 norms

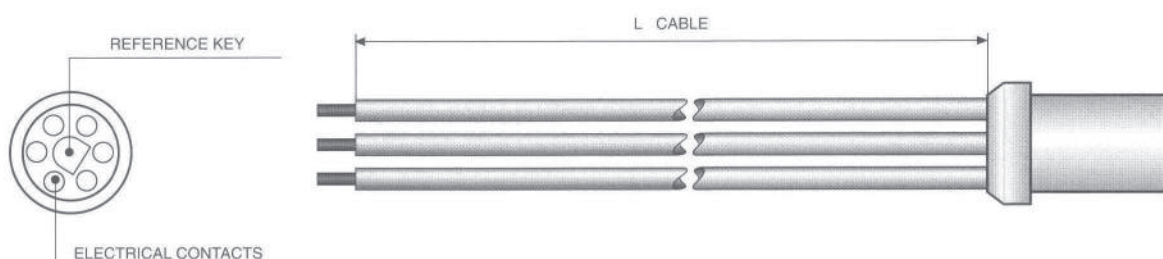
Type of port connection on valve	Matrix Easy 6 poles
Threads diameter	1.4 mm
Conductor diameter	AWG 24
Maximum temperature use	105° C
Insulation	300 Volt
Covering threads	PVC (polyvinyl chloride)

### How to order Easy IP 52 port connection cables - Available lengths

#### Ending with soldered threads cable - 2, 4 and 8 electrical control valves

Cable length	2 Controls	4 Controls	8 Controls
500 mm	cod. 868.870 C	cod. 868.871 D	cod. 868.872 E
1.000 mm	cod. 868.873 F	cod. 868.875 H	cod. 868.877 J
2.000 mm	cod. 868.874 G	cod. 868.876 I	cod. 868.878 K
3.000 mm	cod. 868.845 D	cod. 868.880 M	cod. 868.881 N

Easy IP 52 port connection cable (IP protection according to CEI EN 60947 and CEI 60529 norms)





# ACCESSORIES

## Manifold - 750 Series

Manifolds for multiple installing represent a fast and safe system of fastening and connection for all 750 Series models.

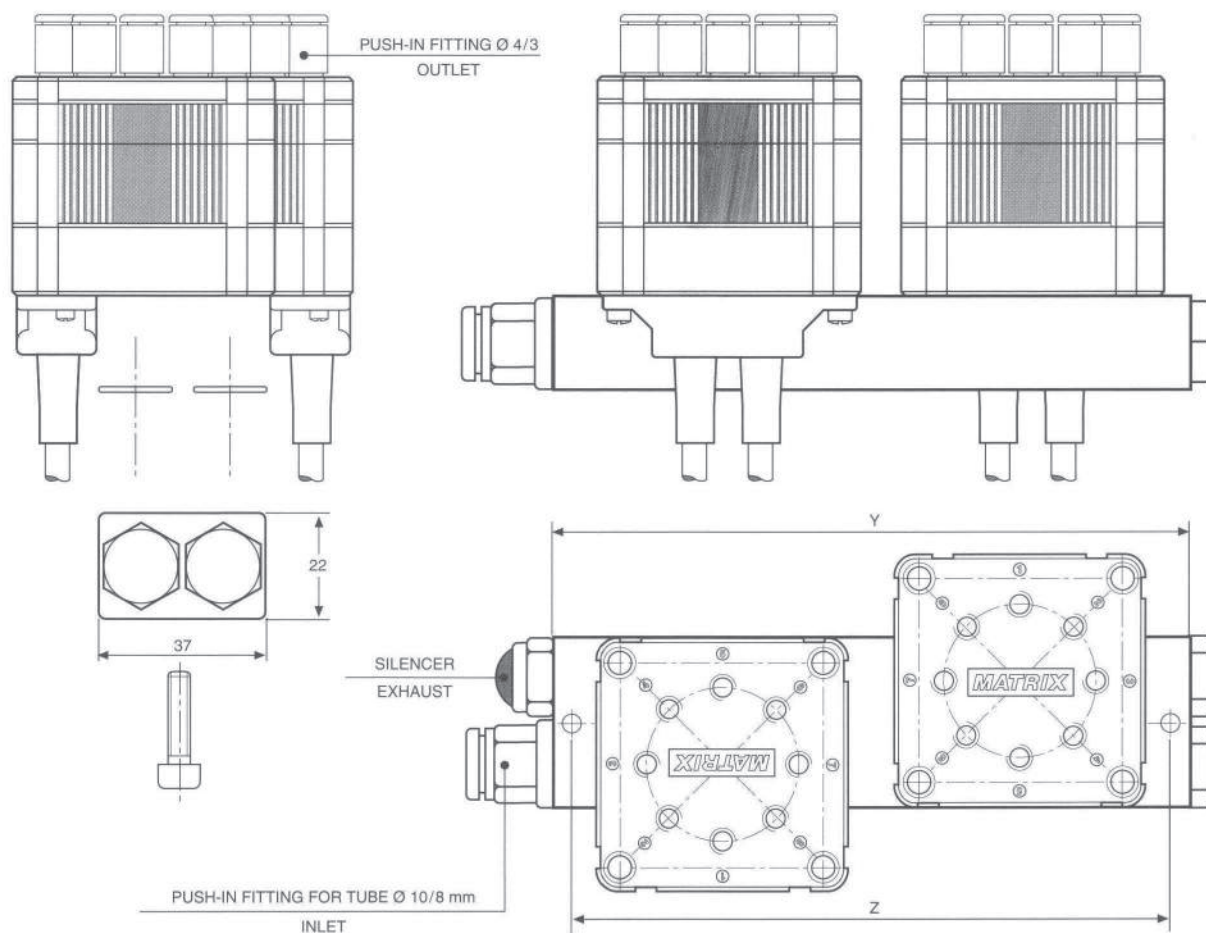
They are suitable for the rationalisation of complex pneumatic systems thanks to their simplicity of the assembly and their total modularity.

Manifolds are available for patterns from 2 to 8 solenoid valves of 750 series and are consistent with Matrix Easy electrical port connection and cables. They come in kit with fastening screws, push-in fittings and sealing O-Rings.

### How to order Manifolds - Available patterns

Pattern	Kid code	Y ( mm )	Z ( mm )
no. 2 Solenoid valves	868.950 E	140	130
no. 3 Solenoid valves	868.951 F	195	65
no. 4 Solenoid valves	868.952 G	260	130
no. 5 Solenoid valves	868.953 H	325	195
no. 6 Solenoid valves	868.954 I	390	260
no. 7 Solenoid valves	868.955 J	455	325
no. 8 Solenoid valves	868.956 K	520	390

2 position manifold. Assembly example of a 750 NC model and a 750 NO model





## Manifold - 750 Series

3,4,5,6,7,8 position manifolds.

See previous scheme for Y and Z dimensions and relative ordering codes.

