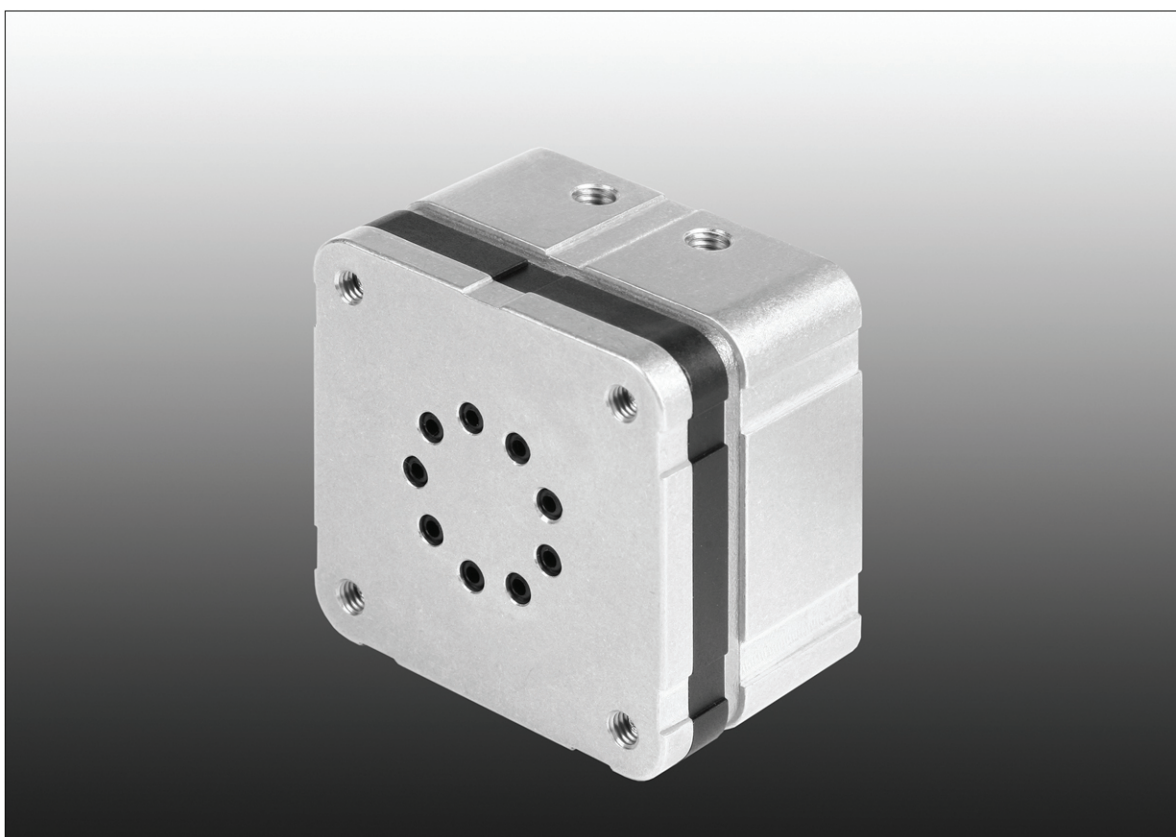
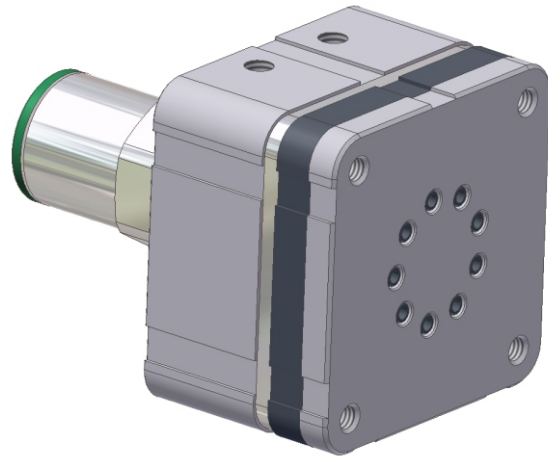


# 890 Series



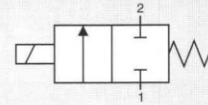
**HIGH PERFORMANCES SOLENOID MULTI VALVE**  
*PNEUMATIC DIVISION*

**MATRIX**  
*mechatronics*



CONTROL: **DIRECT** **PFM** **PNM** **PWM**

N. 9 NC



**GENERAL CHARACTERISTICS**

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

**IDENTIFICATION CODE**

D	M	X	8	9	0	9	0	0	C	2	24
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**OUTLETS**

0	9 Outlets without interface
---	-----------------------------

**SINGLE OUTLET FLOW RATE (at 6 bar)**

M	100 NI / min
N	140 NI/min (control tension <b>XX</b> <b>KK</b> )
O	180 NI/min (control tension <b>XX</b> <b>KK</b> )
X	220 NI/min. (Control tension <b>XX</b> <b>KK</b> )

**VERSION**

J	Manifold with HNBR flaps
D	Manifold with NBR flaps

**No. ELECTRICAL CONTROLS**

1	1 Control (9 Outlets)
3	3 Controls (3 Outlets)
9	9 Controls (1 Outlet)

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
G	Easy connection (2x M8 5pin connector) <span style="color: red;">Not yet available</span>
H	Easy connection (M12 12pin cable connector)

**FUNCTION**

C	NC
---	----

**TYPE**

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

**CONTROL TENSION**

24	24 VDC ± 10 %	2.9 W <sup>(1)</sup>
XX	Speed-up in current (48 VDC)	1.3 W <sup>(1)</sup>
KK	Speed-up in tension (24 VDC)	0.8 W <sup>(1)</sup>

<sup>(1)</sup> Single shutter

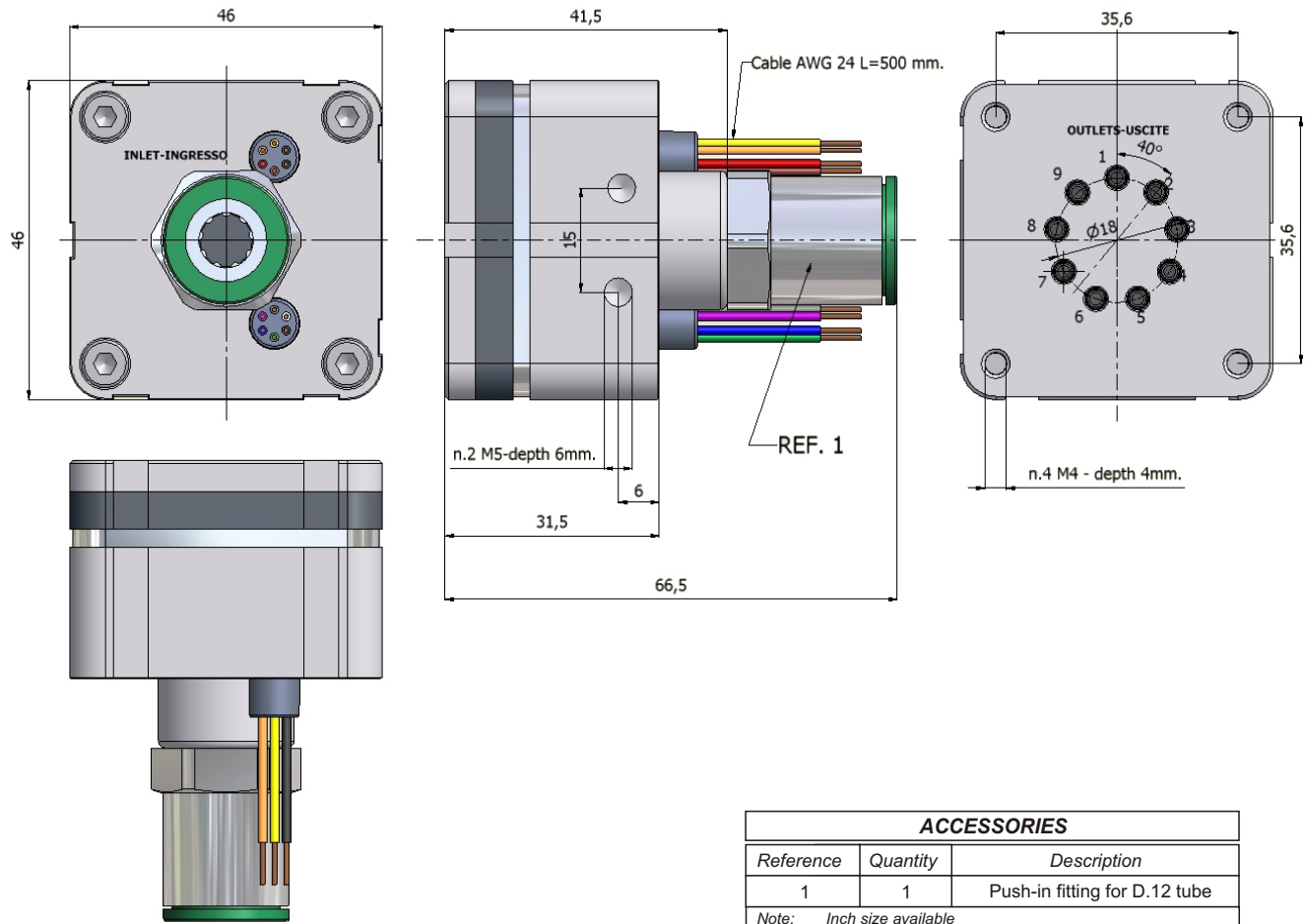
\* **H1** HIGH FREQUENCY (up to 800 Hz.)

\* **H2** HIGH FREQUENCY (up to 2000 Hz.)

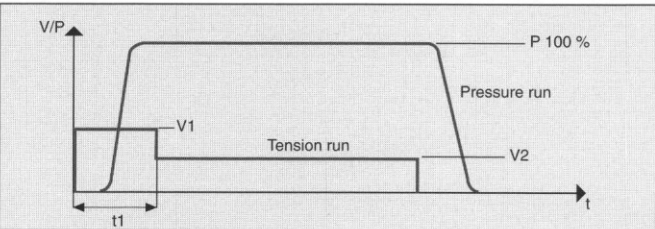
(\*) For the General characteristics refer to the proper technical specification

**OPERATING PRESSURE**

	RANGE	MODELS
0	2 - 8 bar	ALL (except H1/H2)
E	2 - 3 bar	H1 / H2 only



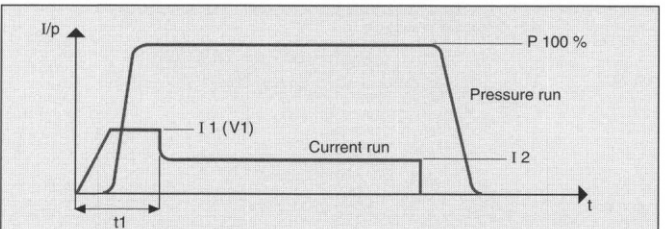
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

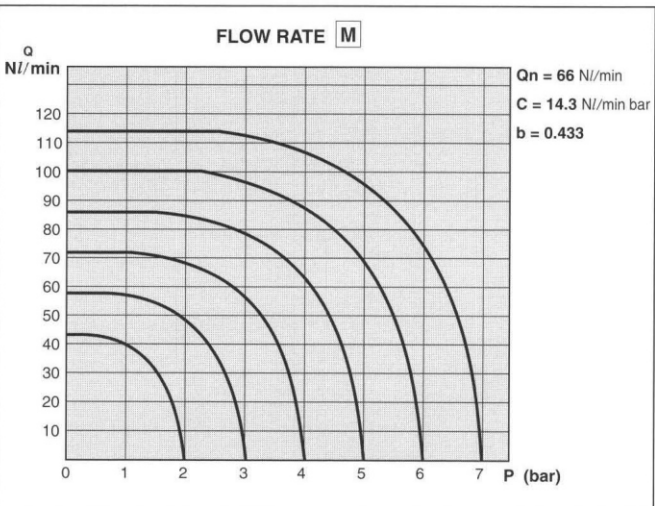
M	V 1 = 24 VDC	t 1 = 2 ms	V 2 = 5 VDC
N	V 1 = 24 VDC	t 1 = 2 ms	V 2 = 5 VDC
O	V 1 = 24 VDC	t 1 = 3 ms	V 2 = 5 VDC

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



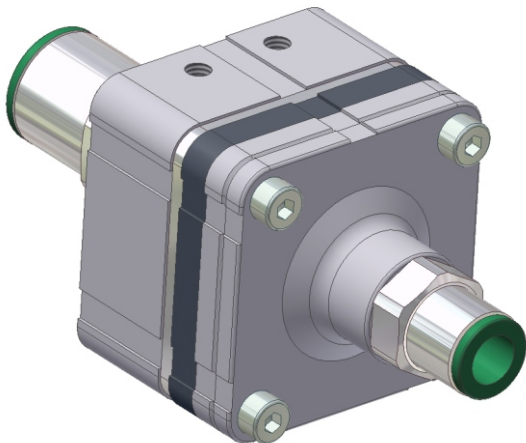
N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I 1 = 0.5 A	t 1 = 1.5 ms	I 2 = 0.2 A
N	I 1 = 0.8 A	t 1 = 1.5 ms	I 2 = 0.2 A
O	I 1 = 1.0 A	t 1 = 1.5 ms	I 2 = 0.3 A



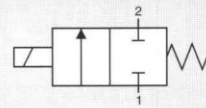
**ELECTRICAL PORT CONNECTION**

COLOUR	1 CONTROL	3 CONTROLS	9 CONTROLS
BLACK	COMMON	COMMON	COMMON
BROWN	—	1 - 2 - 9	1
RED	1 → 9	3 - 4 - 5	2
ORANGE	—	6 - 7 - 8	3
YELLOW	—	—	4
GREEN	—	—	5
BLUE	—	—	6
VIOLET	—	—	7
GREY	—	—	8
WHITE	—	—	9



CONTROL: **DIRECT** **PFM** **PNM** **PWM**

N.1 NC



**GENERAL CHARACTERISTICS**

FLUID	Non-lubricated dry air, neutral gases (-10 + 50°C)	
FILTRATION RATING	Min 40 micron	
TEMPERATURE	- 10 + 50°C (Standard version)	
RESPONSE TIME IN OPENING	24 < 5 ms	XX / KK < 1 ms
RESPONSE TIME IN CLOSING	24 < 2 ms	XX / KK < 1 ms
MAXIMUM FREQUENCY	200 Hz	500 Hz
WEIGHT	~ 260 g.	
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles	
IP RATING	IP 62	

**IDENTIFICATION CODE**

	M	X	8	9	1	9	0	0	C	2	24
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**OUTLETS**

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

**SINGLE OUTLET FLOW RATE (at 6 bar)**

M	900 NI/min.
N	1260 NI/min. (Control tension <b>XX</b> <b>KK</b> )
O	1620 NI/min. (Control tension <b>XX</b> <b>KK</b> and electrical control <b>3</b> <b>9</b> )

**VERSION**

	Body Ported
H	HNBR flaps

**No. ELECTRICAL CONTROLS**

1	1 Control (9 Outlets)
3	3 Controls (3 Outlets)
9	9 Controls (1 Outlet)

**PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
G	Easy connection (2x M8 5pin connector) <span style="color: red;">Not yet available</span>
H	Easy connection (M12 12pin cable connector)

**FUNCTION**

C	NC
---	----

**TYPE**

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

**CONTROL TENSION**

24	24 VDC ± 10 %	2.9-26.1 W
XX	Speed-up in current (48 VDC)	1.3 - 12.1 W
KK	Speed-up in tension (24 VDC)	0.8 - 7.6 W

(1) Single shutter

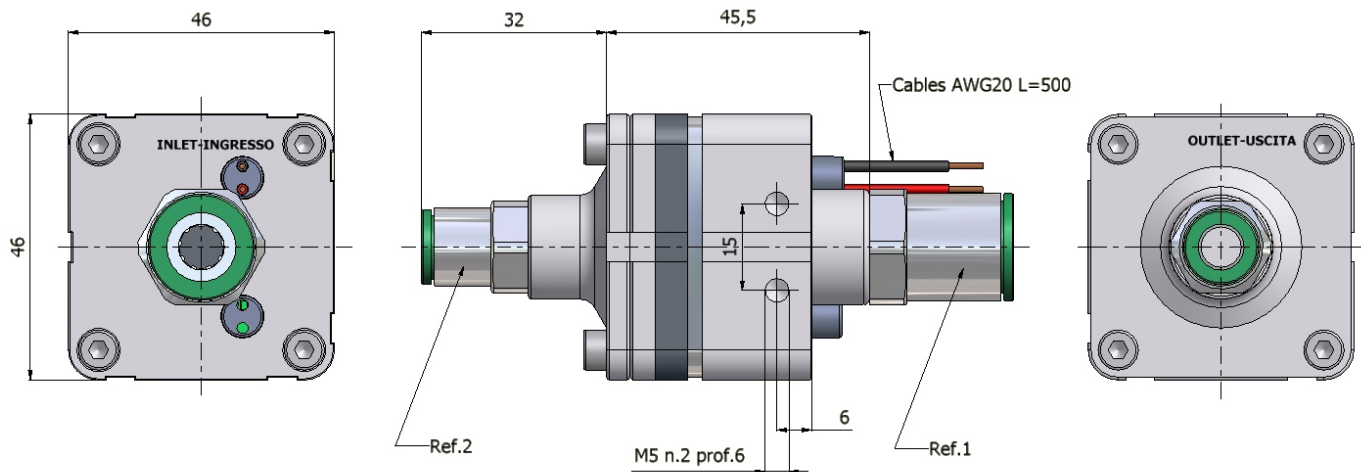
\* **H1** HIGH FREQUENCY (up to 800 Hz.)

\* **H2** HIGH FREQUENCY (up to 2000 Hz.)

**(\*) For the General characteristics refer to the proper technical specification**

**OPERATING PRESSURE**

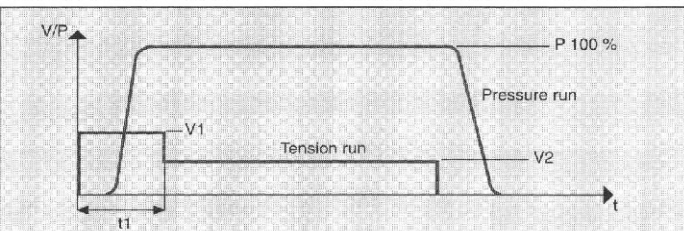
	RANGE	MODELS
0	2 - 8 bar	ALL (except H1/H2)
E	2 - 3 bar	H1 / H2 only



ACCESSORIES		
Reference	Quantity	Description
1	1	Push-in fitting for D.12 tube
2	1	Push-in fitting for D.8 tube

Note: Inch size available

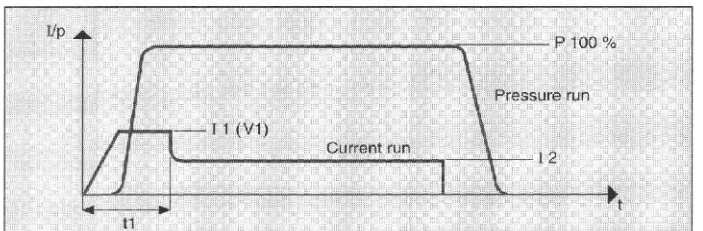
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

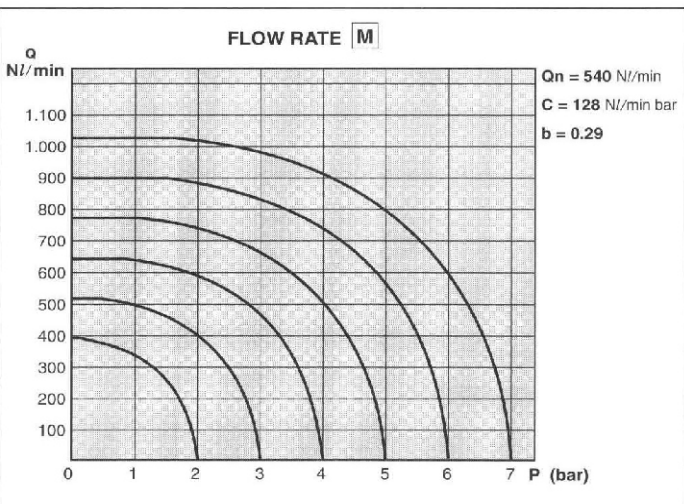
M	V 1 = 24 VDC	t 1 = 3 ms	V 2 = 5 VDC
N	V 1 = 24 VDC	t 1 = 4 ms	V 2 = 5 VDC

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



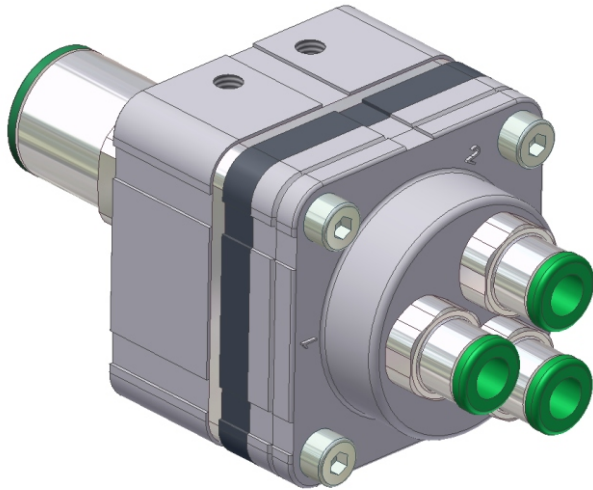
N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I 1 = 3.5 A	t 1 = 1.5 ms	I 2 = 1 A
N	I 1 = 4.0 A	t 1 = 1.5 ms	I 2 = 1 A

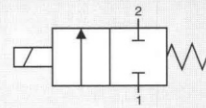


ELECTRICAL PORT CONNECTION			
COLOUR	1 CONTROL	3 CONTROLS	9 CONTROLS
BLACK	COMMON	COMMON	COMMON
BROWN	—	1 - 2 - 9	1
RED	1 → 9	3 - 4 - 5	2
ORANGE	—	6 - 7 - 8	3
YELLOW	—	—	4
GREEN	—	—	5
BLUE	—	—	6
VIOLET	—	—	7
GREY	—	—	8
WHITE	—	—	9

CONTROL: **DIRECT** **PFM** **PNM** **PWM**



N.3 NC



**GENERAL CHARACTERISTICS**

FLUID	Non-lubricated dry air, neutral gases (-10 + 50°C)	
FILTRATION RATING	Min 40 micron	
TEMPERATURE	- 10 + 50°C (Standard version)	
RESPONSE TIME IN OPENING	24 < 5 ms	XX / KK < 1 ms
RESPONSE TIME IN CLOSING	24 < 2 ms	XX / KK < 1 ms
MAXIMUM FREQUENCY	200 Hz	500 Hz
WEIGHT	~ 260 g.	
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles	
IP RATING	IP 62	

**IDENTIFICATION CODE**

	M	X	8	9	3	9	0	0	C	2	24
--	---	---	---	---	---	---	---	---	---	---	----

● **OUTLETS**

3	3 Outlet
---	----------

● **SINGLE OUTLET FLOW RATE (at 6 bar)**

M	300 NI/min.
N	420 NI/min. (Control tension <b>XX</b> <b>KK</b> )
O	520 NI/min. (Control tension <b>XX</b> <b>KK</b> )

● **VERSION**

	Body Ported
H	HNBR flaps

● **No. ELECTRICAL CONTROLS**

3	3 Controls (3 Outlets)
9	9 Controls (1 Outlet)

● **PORT CONNECTION**

0	Integrated cables IP 62 L = 500 mm
G	Easy connection (2x M8 5pin connector) <span style="color: red;">Not yet available</span>
H	Easy connection (M12 12pin cable connector)

● **FUNCTION**

C	NC
---	----

● **TYPE**

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

● **CONTROL TENSION**

24	24 VDC ± 10 %	2.9 - 8.7 W
XX	Speed-up in current (48 VDC)	1.3 - 4.0 W
KK	Speed-up in tension (24 VDC)	0.8 - 2.5 W

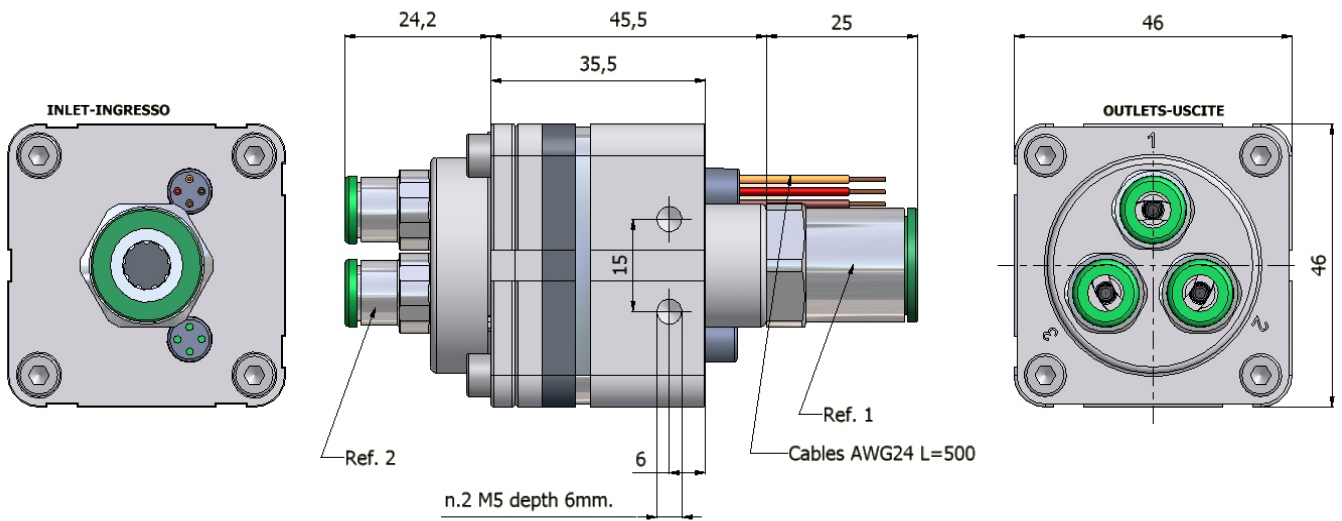
\* H1 HIGH FREQUENCY (up to 800 Hz.)

\* H2 HIGH FREQUENCY (up to 2000 Hz.)

(\*) For the General characteristics refer to the proper technical specification

● **OPERATING PRESSURE**

	RANGE	MODELS
0	2 - 8 bar	ALL (except H1/H2)
E	2 - 3 bar	H1 / H2 only

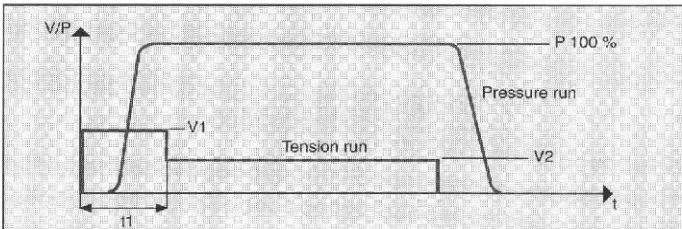


**ACCESSORIES**

Reference	Quantity	Description
1	1	Push-in fitting for D.12 tube
2	1	Push-in fitting for D.6 tube

Note: Inch size available

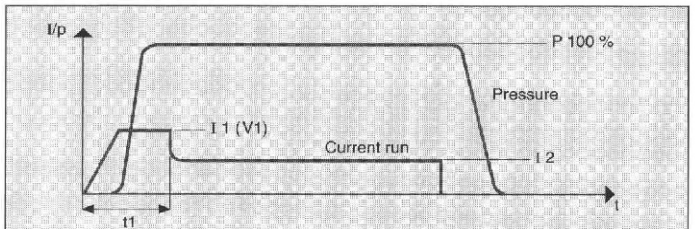
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

M	V1 = 24 VDC	t1 = 2 ms	V2 = 5 VDC
N	V1 = 24 VDC	t1 = 2.5 ms	V2 = 5 VDC
O	V1 = 24 VDC	t1 = 3.5 ms	V2 = 5 VDC

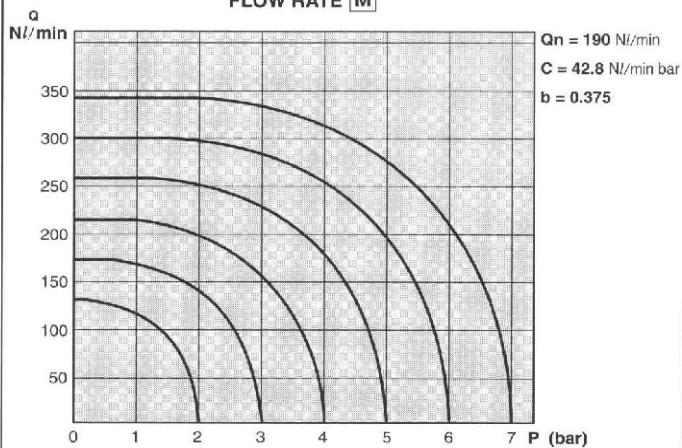
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX**



N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I1 = 1 A	t1 = 1.5 ms	I2 = 0.3 A
N	I1 = 1.5 A	t1 = 1.5 ms	I2 = 0.3 A
O	I1 = 2.8 A	t1 = 1.5 ms	I2 = 0.3 A

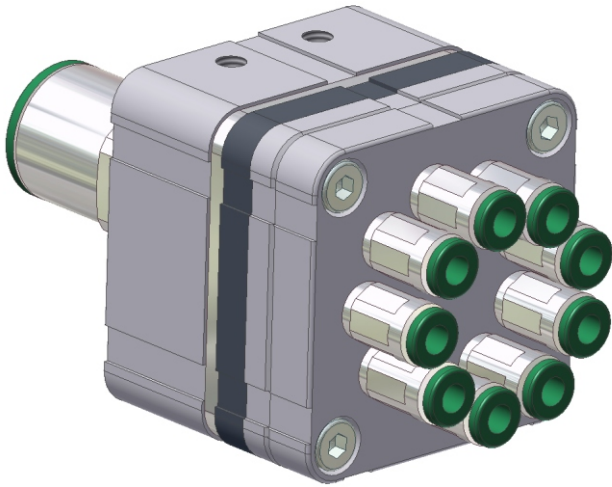
**FLOW RATE [M]**



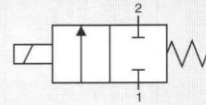
**ELECTRICAL PORT CONNECTION**

COLOUR	3 CONTROLS	9 CONTROLS (OUTLET)
BLACK	COMMON	COMMON
BROWN	1	1 (1)
RED	2	2 (1)
ORANGE	3	3 (2)
YELLOW	—	4 (2)
GREEN	—	5 (2)
BLUE	—	6 (3)
VIOLET	—	7 (3)
GREY	—	8 (3)
WHITE	—	9 (1)

CONTROL:  DIRECT  PFM   PWM



N. 9 NC



**GENERAL CHARACTERISTICS**

FLUID	Non-lubricated dry air, neutral gases (-10 + 50°C)	
FILTRATION RATING	Min 40 micron	
TEMPERATURE	- 10 + 50°C (Standard version)	
RESPONSE TIME IN OPENING	24 < 5 ms	XX / KK < 1 ms
RESPONSE TIME IN CLOSING	24 < 2 ms	XX / KK < 1 ms
MAXIMUM FREQUENCY	200 Hz	500 Hz
WEIGHT	~ 260 g.	
PRODUCT LIFE EXPECTANCY	≥ 500 M/s cycles	
IP RATING	IP 62	

**IDENTIFICATION CODE**

D	M	X	8	9	9	9	0	0	C	2	24
---	---	---	---	---	---	---	---	---	---	---	----

- **OUTLETS**  
9 | 9 Outlets without interface
- **SINGLE OUTLET FLOW RATE (at 6 bar)**

M	100 NI / min
N	140 NI/min (control tension XX   KK)
O	180 NI/min (control tension XX   KK)
X	220 NI/min. (Control tension XX   KK)
- **VERSION**

J	Manifold with HNBR flaps
D	Manifold with NBR flaps
- **No. ELECTRICAL CONTROLS**

1	1 Control (9 Outlets)
3	3 Controls (3 Outlets)
9	9 Controls (1 Outlet)
- **PORT CONNECTION**

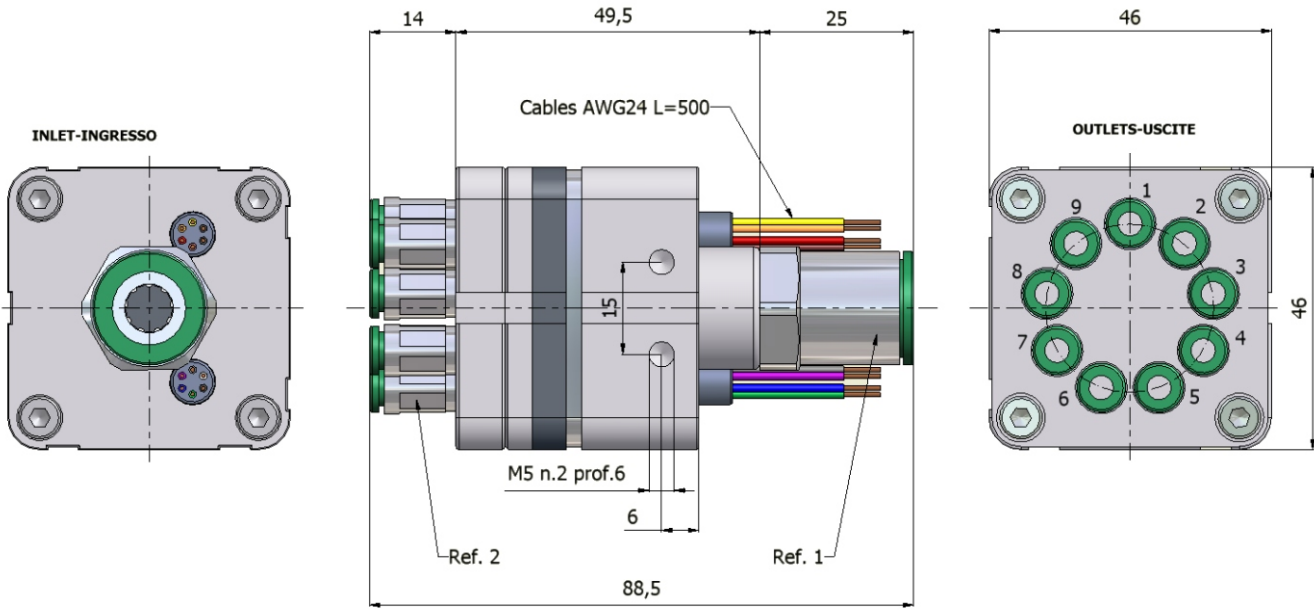
0	Integrated cables IP 62 L = 500 mm
G	Easy connection (2x M8 5pin connector) <span style="color: red;">Not yet available</span>
H	Easy connection (M12 12pin cable connector)
- **FUNCTION**  
C | NC
- **TYPE**  
2 | 2/2
- **CONTROL TENSION**

24	24 VDC ± 10 %	2.9 W (1)
XX	Speed-up in current (48 VDC)	1.3 W (1)
KK	Speed-up in tension (24 VDC)	0.8 W (1)
* H1	HIGH FREQUENCY (up to 800 Hz.)	
* H2	HIGH FREQUENCY (up to 2000 Hz.)	

(\*) For the General characteristics refer to the proper technical specification
- **OPERATING PRESSURE**

	RANGE	MODELS
0	2 - 8 bar	ALL (except H1/H2)
E	2 - 3 bar	H1 / H2 only

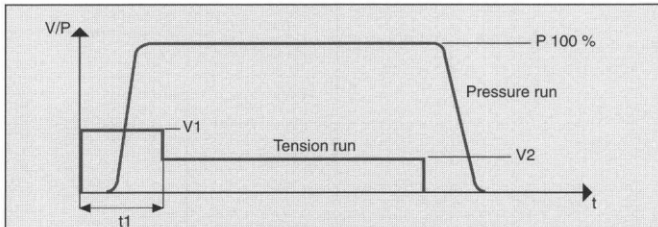




ACCESSORIES		
Reference	Quantity	Description
1	1	Push-in fitting for D.12 tube
2	1	Push-in fitting for D.4 tube

Note: Inch size available

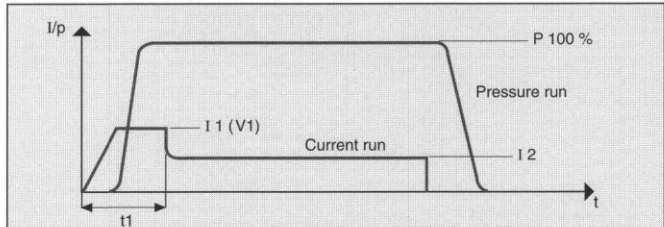
**CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK**



N.B. KK MODELS ARE CONTROLLED IN TENSION

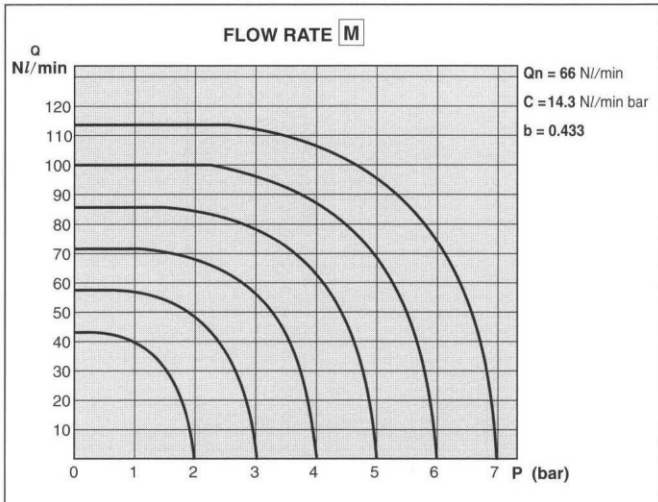
M	V 1 = 24 VDC	t 1 = 2 ms	V 2 = 5 VDC
N	V 1 = 24 VDC	t 1 = 2 ms	V 2 = 5 VDC
O	V 1 = 24 VDC	t 1 = 3 ms	V 2 = 5 VDC

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



N.B. XX MODELS ARE CONTROLLED IN CURRENT

M	I 1 = 0.5 A	t 1 = 1.5 ms	I 2 = 0.2 A
N	I 1 = 0.8 A	t 1 = 1.5 ms	I 2 = 0.2 A
O	I 1 = 1.0 A	t 1 = 1.5 ms	I 2 = 0.3 A



**ELECTRICAL PORT CONNECTION**

COLOUR	9 CONTROLS
BLACK	COMMON
BROWN	1
RED	2
ORANGE	3
YELLOW	4
GREEN	5
BLUE	6
VIOLET	7
GREY	8
WHITE	9

**EV 890 "exploded view"**

