

2.8

Namur Valves

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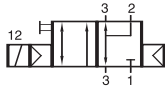
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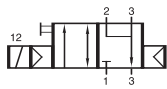
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The Hafner company policy is one of a continuous improvement process. We therefore reserve the right to amend, enhance and change specifications of the products presented in this document without notice.

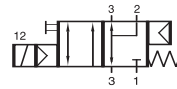
MNH 310 701/MNH 310 711 MNH 311 701/MNH 310 121



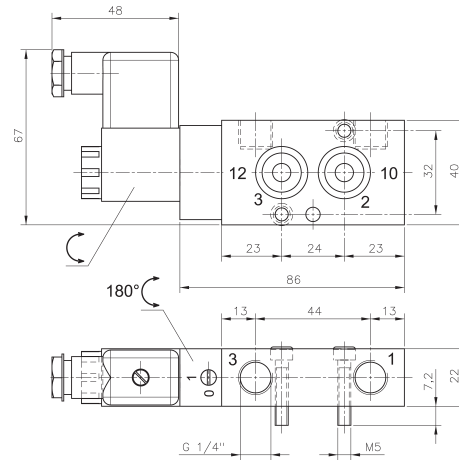
MNH 310 701
MNH 310 121



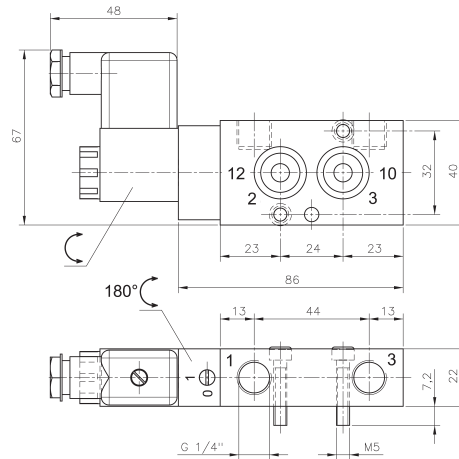
MNH 310 711



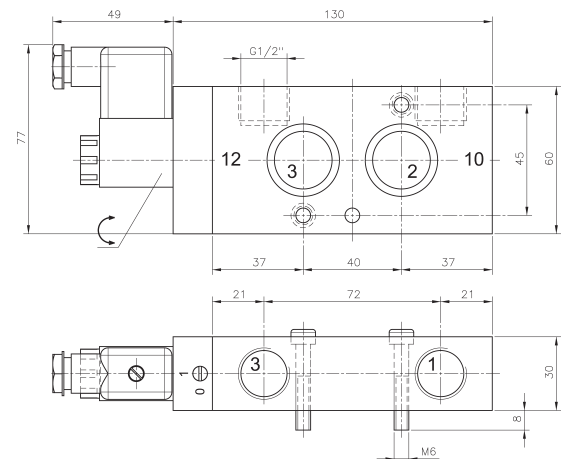
MNH 311 701



MNH 310 701/MNH 311 701



MNH 310 711 ports 1 and 3 are swapped!



MNH 310 121

3/2-way solenoid valve, normally closed, actuated by permanent signal. Interface according to Namur standard with exhaust air recirculation.

MNH 310 701, MNH 310 711 and MNH 310 121 with pneumatic spring return, MNH 311 701 with combined spring assuring a fail-safe function in case of cut-off of pressure supply.

Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V~, 12V=.

The valves are generally equipped with manual override to turn. If requested without manual override please order MN 31 _ _ _ _.

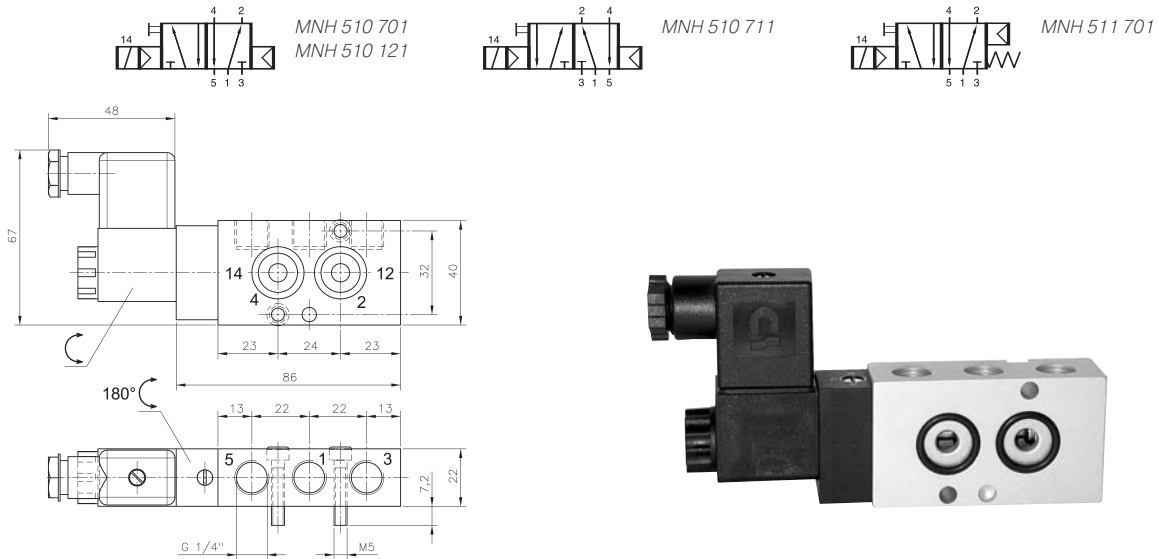
Available also with external pilot feed and mechanical spring return. If requested please order MENH 311 _ _ _ _ (add 3 digits for size).

Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector as shown on the photo.

Versions with pure pneumatic spring are available in ATEX-approved EEx-versions EEx M and EEx i.A.. Please refer to page 2.9.2.

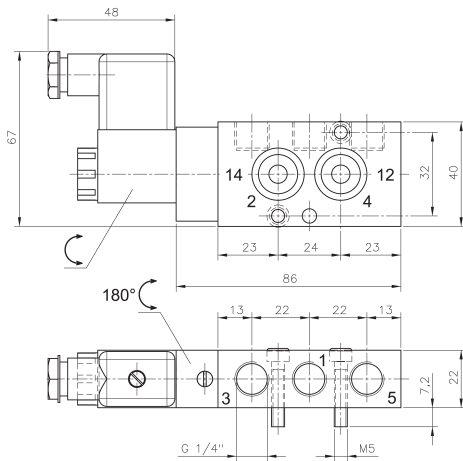
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MNH 310 701	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 310 711	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 311 701	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 310 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,72 kg

MNH 510 701/MNH 510 711 MNH 511 701/MNH 510 121



MNH 510 701/MNH 511 701

5/2-way solenoid valve actuated by permanent signal. Interface according to Namur standard.



MNH 510 701, MNH 510 711 and MNH 510 121 with pneumatic spring return, MNH 511 701 with combined spring assuring a fail-safe function in case of cut-off of pressure supply.

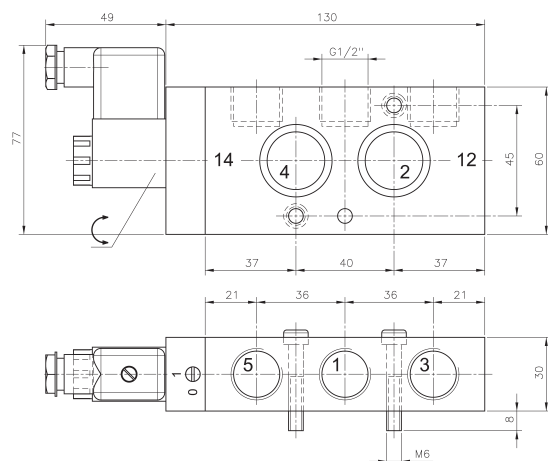
Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

The valves are generally equipped with manual override to turn. If requested without manual override please order MN 51 _ _ _ _.

Also available with external pilot feed and mechanical spring return. If requested please order MENH 511 _ _ _ _ (add 3 digits for size).

MNH 510 711 ports 2,4,3,5 are swapped!

Delivery includes 1 pin, 2 screws, 2 O-rings and 1 connector as shown on the photo.

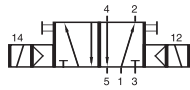


MNH 510 121

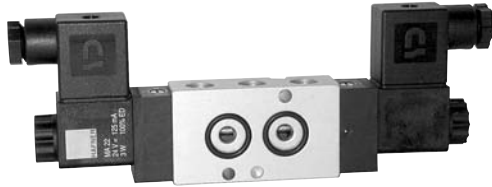
Versions with pure pneumatic spring are available in ATEX-approved EEx-versions EEx M and EEx i.A.. Please refer to page 2.9.2.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MNH 510 701	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 510 711	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 511 701	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,27 kg
MNH 510 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,72 kg

MNH 520 701/MNH 520 121



MNH 520 701
MNH 520 121



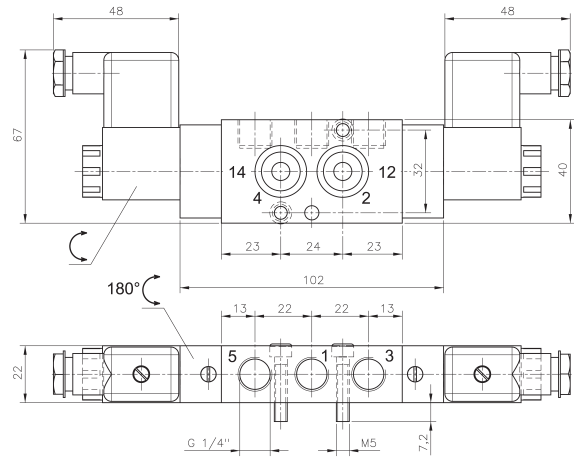
5/2-way solenoid valve actuated by impulse. Position is kept until next electrical signal even when not attached to electrical source. Interface according to Namur standard.

Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=
24V=, 12V=.

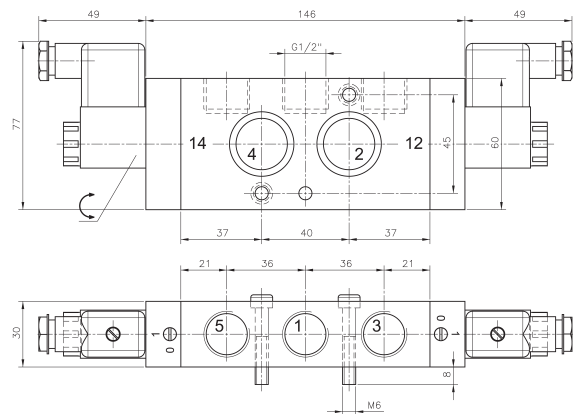
The valves are generally equipped with manual override to turn. If requested without manual override please order MN 520 _ _ _ _.

Also available with external pilot feed. If requested please order MENH 520 _ _ _ (add 3 digits for size).

Delivery includes 1 pin, 2 screws, 2 O-rings and 2 connectors as shown on the photo.



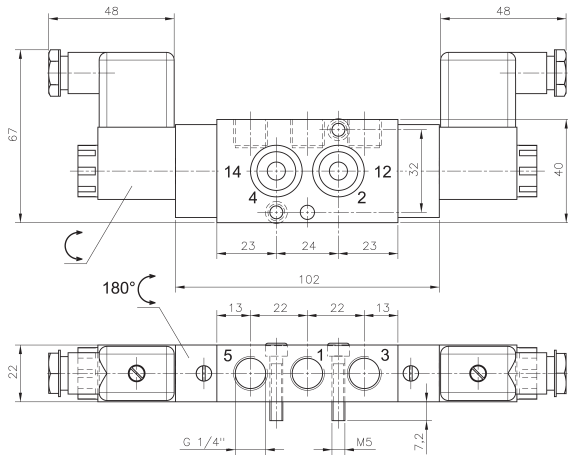
MNH 520 701



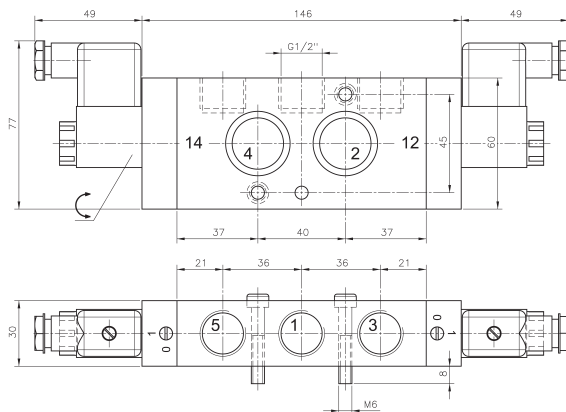
MNH 520 121

Also available in ATEX-approved EEx-versions EEx M and EEx i.A.. Please refer to page 2.9.2.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MNH 520 701	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,37 kg
MNH 520 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,89 kg



MNH 531 701



MNH 531 121



5/3-way solenoid valve with spring return to middle position actuated by permanent signal. Closed in middle position. Interface according to Namur standard.

Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

The valves are generally equipped with manual override to turn. If requested without manual override please order MN 531 701.

Also available with external pilot feed. If requested please order MENH 531 ___ (add 3 digits for size).

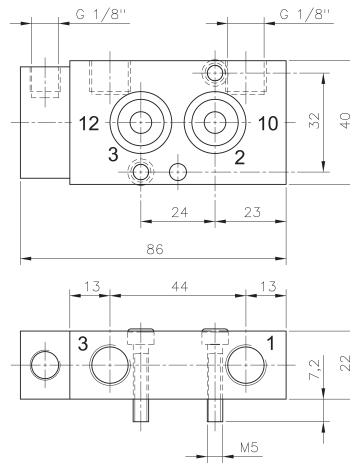
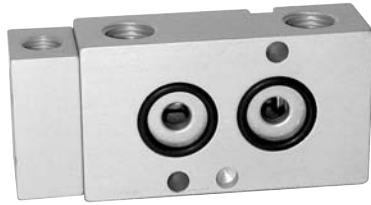
Other 5/3-way versions (middle position exhausted or pressurised) are available on request.

Delivery includes 1 pin, 2 screws, 2 O-rings and 2 connectors as shown on the photo.

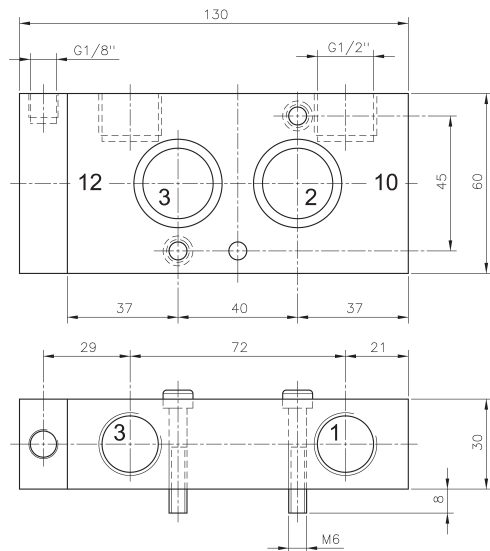
Also available in ATEX-approved EEx-versions EEx M and EEx i.A.. Please refer to page 2.9.2.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MNH 531 701	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,37 kg
MNH 531 121	G 1/2"	3000 l/min	3 - 10 bar	3 W = / 5 VA ~	0,89 kg

PN 310 701/PN 311 701/PN 310 121



PN 310 701/PN 311 701



PN 310 121

Pneumatically actuated 3/2-way spool valve. Interface according to Namur standard with exhaust recirculation. PN 310 701 and PN 310 121 with pneumatic spring. For valves with pure pneumatic spring operating and actuation pressure should be at the same level. PN 311 701 with combined mechanical and pneumatic spring return.

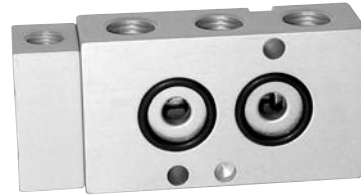
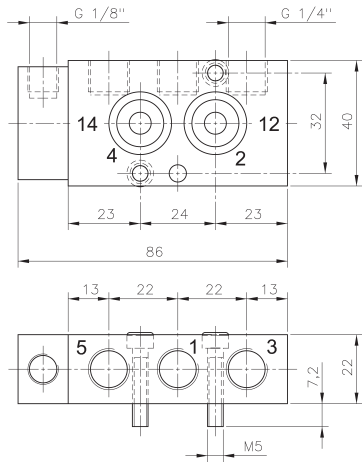
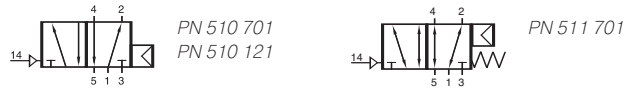
Port sizes types 701: 1 and 3: G 1/4"
12: G 1/8"

Port sizes type 121: 1 and 3: G 1/4"
12: G 1/8"

Delivery includes 1 pin, 2 screws and 2 O-rings.

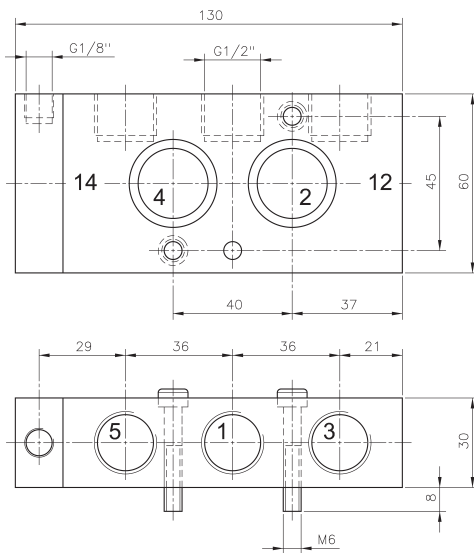
Type	Port size	Air flow	Operating press.	Actuating press.	Weight
PN 310 701	G 1/4" - G 1/8"	1250 l/min	1,5 - 10 bar	the same	0,20 kg
PN 311 701	G 1/4" - G 1/8"	1250 l/min	1,5 - 10 bar	3 - 10 bar	0,20 kg
PN 310 121	G 1/2" - G 1/8"	3000 l/min	1 - 10 bar	the same	0,62 kg

PN 510 701/PN 511 701/PN 510 121



PN 510 701/PN 511 701

Pneumatically actuated 5/2-way spool valve. Interface according to Namur standard. PN 510 701 and PN 510 121 with pneumatic spring. For valves with pure pneumatic spring operating and actuation pressure should be at the same level. PN 511 701 with combined mechanical and pneumatic spring return.



Port sizes types 701: 1 and 3: G 1/4"
12: G 1/8"

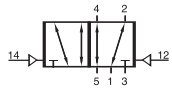
Port sizes type 121: 1 and 3: G 1/4"
12: G 1/8"

Delivery includes 1 pin, 2 screws and 2 O-rings.

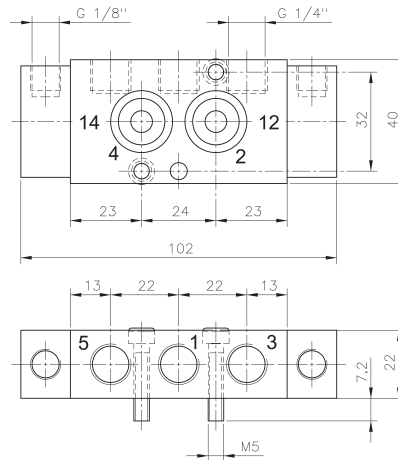
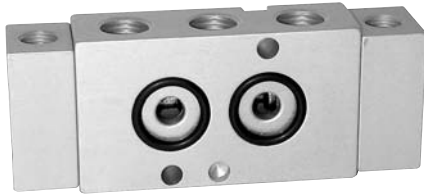
PN 510 121

Type	Port size	Air flow	Operating press.	Actuating press.	Weight
PN 510 701	G 1/4" - G 1/8"	1250 l/min	2 - 10 bar	the same	0,19 kg
PN 511 701	G 1/4" - G 1/8"	1250 l/min	2 - 10 bar	3 - 10 bar	0,19 kg
PN 510 121	G 1/2" - G 1/8"	3000 l/min	1 - 10 bar	the same	0,60 kg

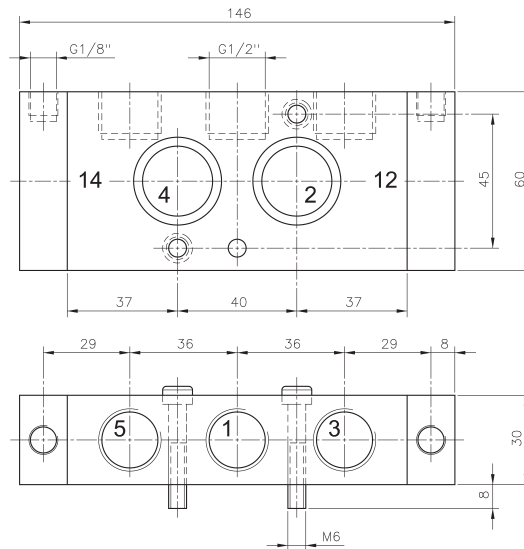
PN 520 701/PN 520 121



PN 520 701
PN 520 121



PN 520 701



PN 520 121

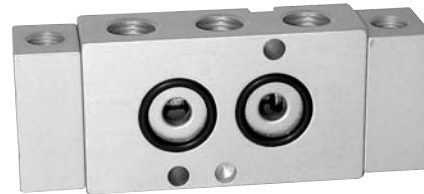
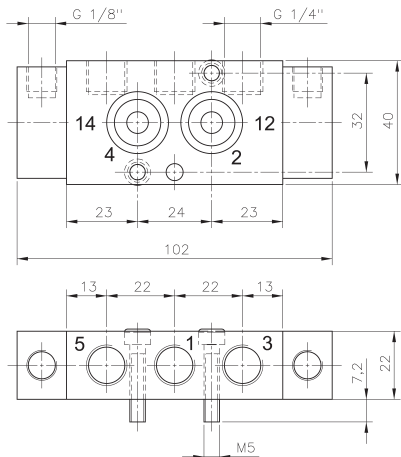
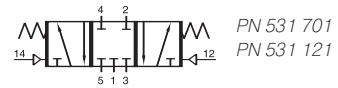
Pneumatically actuated 5/2-way spool valve actuated by impulse. Interface according to Namur standard.

Port sizes 701: 1, 3 and 5: G 1/4"
12 and 14: G 1/8"

Port sizes 121: 1, 3 and 5: G 1/2"
12 and 14: G 1/8"

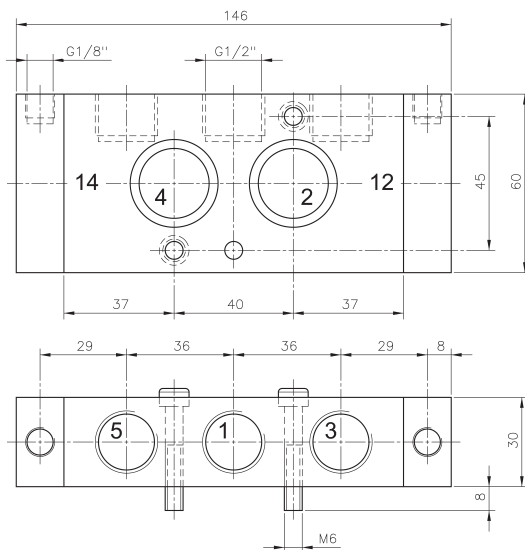
Delivery includes 1 pin, 2 screws and 2 O-rings.

Type	Port size	Air flow	Operating press.	Actuating press.	Weight
PN 520 701	G 1/4" - G 1/8"	1250 l/min	2 - 10 bar	2,5 - 10 bar	0,22 kg
PN 520 121	G 1/2" - G 1/8"	3000 l/min	1 - 10 bar	2,5 - 10 bar	0,67 kg



PN 531 701

Pneumatically actuated 5/3-way spool valve with spring return to middle position, middle position is closed. Interface according to Namur standard.



Port sizes 701: 1, 3 and 5: G 1/4"
12 and 14: G 1/8"

Port sizes 121: 1, 3 and 5: G 1/2"
12 and 14: G 1/8"

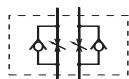
Other 5/3-way versions (middle position exhausted or pressurised) are available on request.

Delivery includes 1 pin, 2 screws and 2 O-rings.

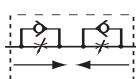
PN 531 121

Type	Port size	Air flow	Operating press.	Actuating press.	Weight
PN 531 701	G 1/4" - G 1/8"	1250 l/min	2 - 10 bar	3 - 10 bar	0,22 kg
PN 531 121	G 1/2" - G 1/8"	3000 l/min	1 - 10 bar	3 - 10 bar	0,67 kg

DRN 5 601/DRN 5 611/DRN 3 601



DRN 5 601
DRN 5 611



DRN 3 601

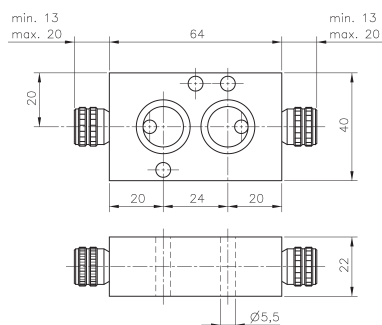


Block form flow regulator as intermediate plate, interface according to Namur standard G 1/4".

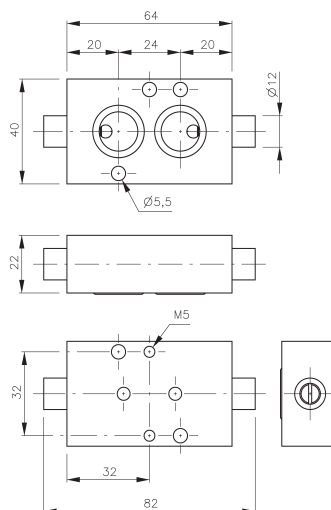
Type DRN 5 601 and DRN 5 611: for 5/2 and 5/3 way valves only. To regulate the forward- and backward stroke of a double acting pneumatic actuator. DRN 5 601 to be operated manually, DRN 5 611 with a screw-driver.

Type DRN 3 601: for 3/2-way valves with exhaust air recirculation only. To regulate the forward stroke of a single acting pneumatic actuator and to regulate the exhaust air going into the spring return unit.

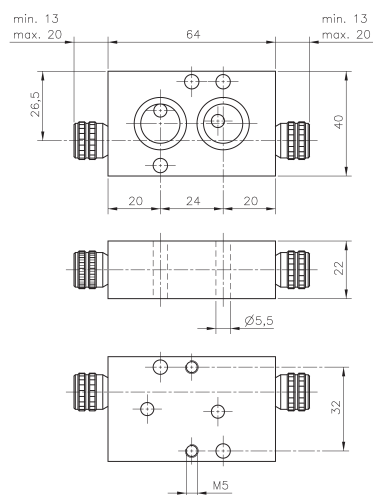
Delivery includes 1 pin, 2 screws (50 mm long), 2 O-rings.



DRN 5 601



DRN 5 611



DRN 3 601

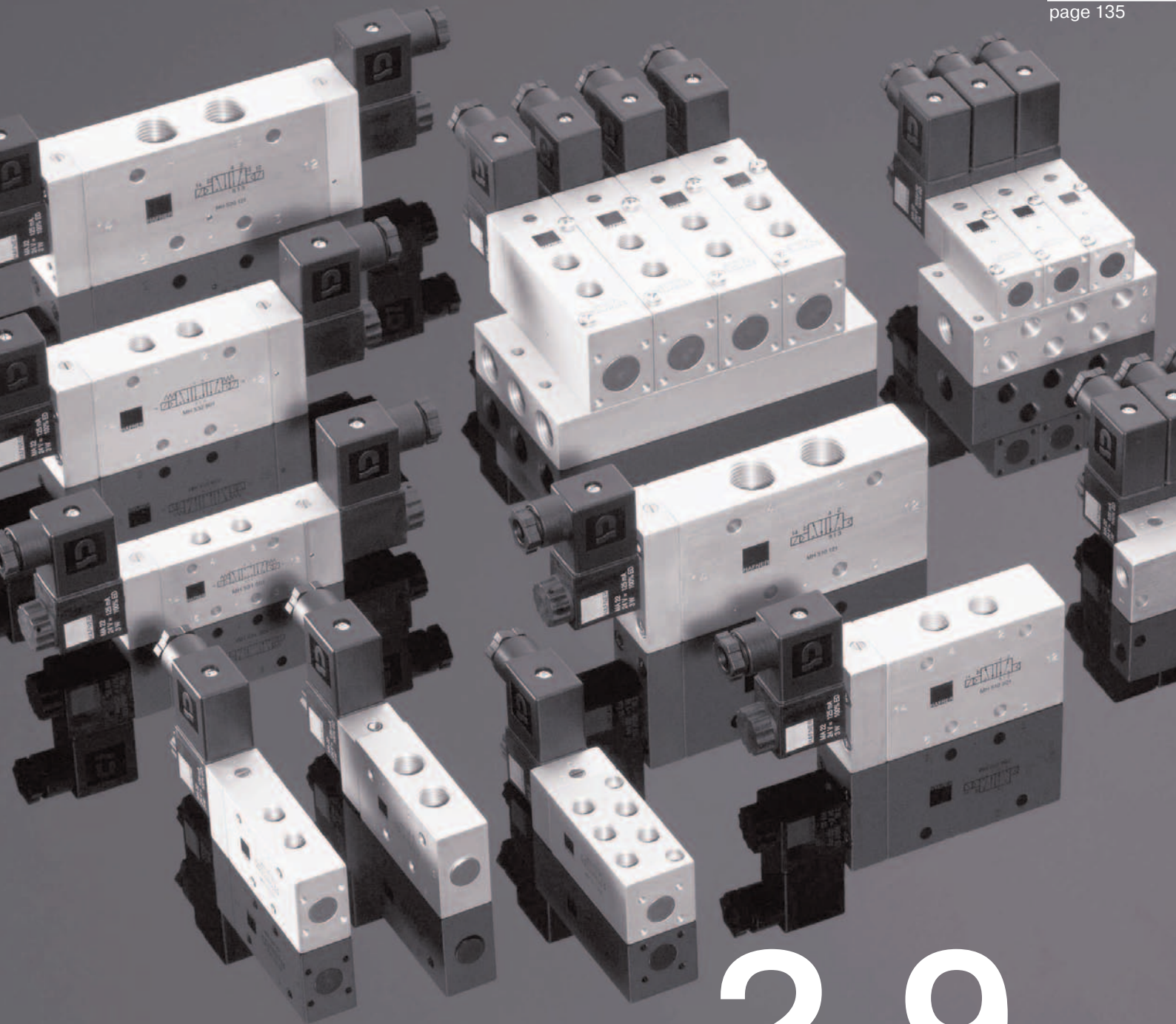
Type	Port size	Max. air flow	Operating pressure	Weight
DRN 5 601	Ø 5 mm	650 l/min	0,5 - 10 bar	0,18 kg
DRN 5 611	Ø 5 mm	650 l/min	0,5 - 10 bar	0,18 kg
DRN 3 601	Ø 5 mm	650 l/min	0,5 - 10 bar	0,18 kg



Mounting accessories to combine several Namur products when assembling them to an actuator. Also for replacement use, when screws, pins or seals are worn-out or have been lost.

O-ring seals are made from NBR 70° shore, fasteners such as screws and pins are made from stainless steel (A2) only.

Type	use and content
ZPN 5	Intermediate plate, made from anodised aluminium 5 mm thick to be used in case a 30 mm wide coil is to be assembled to a 22 mm wide Namur-valve, e.g. EEx i.A..
ETN 1	Accessories for fitting 22 mm wide G 1/4" Namurvalves to actuators, consists of: 10 screws DIN 912 M 5 x 25 , 5 Pins DIN 913, M 5 x 10 and 10 O-rings 15 x 2,5.
ETN 2	Accessories for fitting 30 mm wide G 1/2" Namurvalves to actuators, consists of: 10 screws DIN 912 M 6 x 35, 5 Pins DIN 913, M 6 x 10 and 10 O-rings 24 x 3.
ETNS 1	10 screws DIN 912 M 5 x 25 for fitting a regular 22 mm G 1/4" Namurvalves to an actuator
ETNS 2	10 screws DIN 912 M 5 x 30 for fitting a 30 mm G 1/4" Namurvalve to an actuator
ETNS 3	10 screws DIN 912 M 5 x 50 for fitting a 22 mm G 1/4" Namurvalve and a DRN to an actuator
ETNS 4	10 screws DIN 912 M 5 x 60 for fitting a 30 mm G 1/4" Namurvalve and a DRN to an actuator
ETNS 5	10 screws DIN 912 M 6 x 35 for fitting a 30 mm G 1/2" Namurvalve to an actuator



2.9

Coils and Connectors

MA 22/MA 22 L



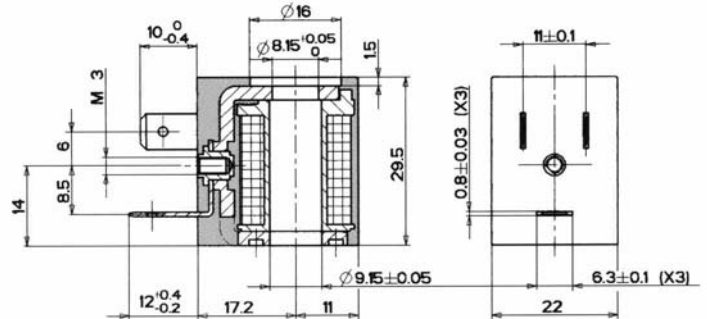
22 mm coils for solenoid valves 22 mm and 30 mm wide (MH-Type).

Housing: heat resistant bobbin moulded with 30 % glass filled thermoplastic polyester material. Equipped with an appropriate connector industry-form B according to DIN/ISO 43650 the coil offers IP 65.

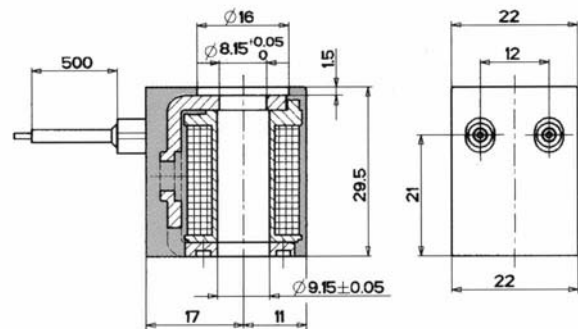
Thermoset resin coils can be made available on request.

Connectors are displayed on page 2.9.3.

Coil types MA 22 L (flying leads version) are not grounded, please take national safety regulations into consideration!

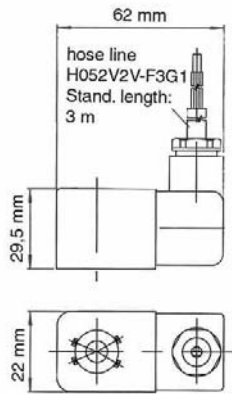


MA 22

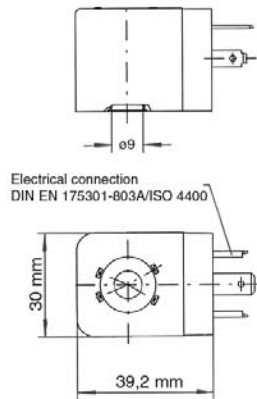


MA 22 L

Type	Voltage	Ampere	Power cons.	Connection	Available
MA 22 12DC	12 V=	250 mA	3 W	Industryform Type B (DIN 436 50)	from stock
MA 22 24DC	24 V=	125 mA	3 W	Industryform Type B (DIN 436 50)	from stock
MA 22 L 24DC	24 V=	125 mA	3 W	Flying leads	from stock
MA 22 48DC	48 V=	62 mA	3 W	Industryform Type B (DIN 436 50)	from stock
MA 22 24AC	24 V~	200 mA	5 VA	Industryform Type B (DIN 436 50)	from stock
MA 22 110AC	110 V~	45 mA	5 VA	Industryform Type B (DIN 436 50)	from stock
MA 22 L5 110AC	110 V~	45 mA	5 VA	Flying leads	on request
MA 22 230AC	230 V~	22 mA	5 VA	Industryform Type B (DIN 436 50)	from stock
MA 22 L5 230AC	230 V~	22 mA	5 VA	Flying leads	from stock



MA 22 EEx M II T4



MA 30 EEx i.A. IIC T6



Atex approved solenoid valves for explosion-hazardous environment zone 1, product category 2G, ambient temperature: -10° ... + 50° C. Products for dusty environment zone 21, category 2D or zone 2, category 3D are available on request.

Standard cable length for MA 22 EEx M II T4: 3 m, others on request.

Electrical connection for MA 30 EEx i.A. IIC T6: DIN EN 175301-803-A / ISO4400.

Please notice: Maximum operating pressure for valves equipped with EEx i.A. solenoid is 8 bar!

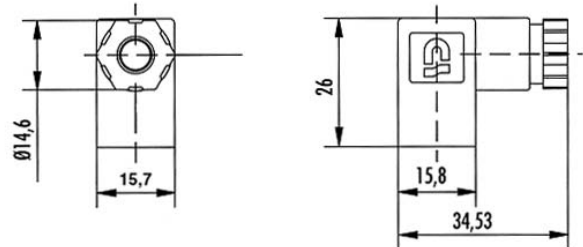
The following valves are available as systems for explosion-hazardous environment:

Delivery includes valve with appropriately assembled operator system, coil, manual and declaration of conformity (066/04).

Types	page
MH 311 012 MH 311 015	2.5.1.1.1
MH 312 MH 315	2.5.1.2.1
MH 310 501 MOH 310 501 MH 310 701 MOH 310 701 MH 310 801 MOH 310 801	2.5.1.1.5
MH 310 101 MOH 310 101 MH 310 121 MOH 310 121	2.5.1.1.6
MH 320 501 MH 320 701 MH 320 801	2.5.1.1.7
MH 320 101 MH 320 121	2.5.1.1.8
MH 510 501 MH 510 701 MH 510 801	2.5.2.1.4
MH 510 101 MH 510 121	2.5.2.1.5
MH 520 501 MH 520 701 MH 520 801	2.5.2.1.9
MH 520 101 MH 520 121	2.5.2.1.10
MH 53_501 MH 53_701 MH 53_801	2.5.3.1.3
MH 53_101 MH 53_121	2.5.3.1.4
MNH 310 701 MNH 310 711 MNH 310 121	2.8.1.1
MNH 510 701 MNH 510 711 MNH 510 121	2.8.1.2.1
MNH 520 701 MNH 520 121	2.8.1.2.2
MNH 531 701 MNH 531 121	2.8.1.3

Type	Operating press.	Power consumption	Temp. class	ignition prot.
MA 22 EEx M II T4 24=	max. 10 bar	5,0 Watt	T 4	encapsulation
MA 22 EEx M II T4 230~	max. 10 bar	5,1 VA	T 4	encapsulation
MA 30 EEx i.A. IIC T6 24=	max. 8 bar	115 mA / 1,6 Watt	T 6	intrinsic safety

ST 16/ST 22



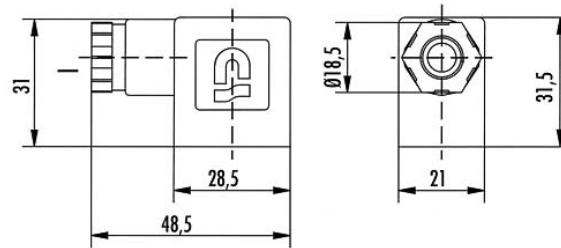
ST 16

Connectors as accessories for Hafner valves.

Using the enclosed flat seal, fastening screws and nuts the system reaches protection class IP 65 in accordance to IEC 60 529.

Other connectors are available on request.

Delivery includes connector, flat NBR gasket and fixing screw (zinc-plated steel).



ST 22

Type	Form	LED	VAR	Operat. voltage	Max. current	cable diamter
ST 16	C, pin-dist. 8 mm	no	no	0 - 250 V	6 A	5 - 6,5 mm
ST 162 V 24	C, pin-dist. 8 mm	red	yes	24 V +/- 10 %	6 A	5 - 6,5 mm
ST 162 V 230	C, pin-dist. 8 mm	red	yes	230 V +/- 10 %	6 A	5 - 6,5 mm
ST 22	Industrial	no	no	0 - 250 V	10 A	6 - 8 mm
ST 222 V 24	Industrial	red	yes	24 V +/- 10 %	10 A	6 - 8 mm
ST 222 V 230	Industrial	red	yes	230 V +/- 10 %	10 A	6 - 8 mm