

97100 NAMUR

3/2, 5/2 & 5/3 way spool valves

electromagnetic actuated, indirectly controlled

flanged with NAMUR Interface, G 1/4, 1/4 NPT

For single and double operated actuators

Crossover-free switching, switch-over function guaranteed even with small cross section air supply

Valve switches at power failure into starting position (mechanical return spring, monostable design)

Manual override with detent standard

The solenoid valves are applicable in the protection class

- Ex m for zones 1, 2, 21, 22 (gases and dusts) ATEX cat.II 2GD
- Ex ia for zones 1, 21, (gases) ATEX cat.II 2G,
- Ex nA, for zones 2, 22 (gases and dusts) ATEX cat.II 3 GD

Technical features

Medium:

Filtered, non-lubricated or dry compressed air

Operation:

Indirectly solenoid operated soft seal valves

Operating pressure:

2 ... 8 bar

Orifice:

6 mm

Port size:

1: G 1/4, 1/4 NPT
3 and 5: G 1/8, 1/8-NPT
NAMUR Interface with integrated exhaust air

Flow direction:

Fixed

Mounting position:

Optional

Electrical connection:

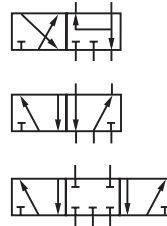
See solenoid table

Fluid/Ambient temperature:

-15 ... +60°C,
Depending on solenoid system
Air supply must be dry enough to avoid ice formation at temperatures below +2°C.

Materials:

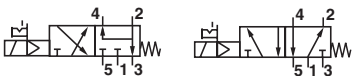
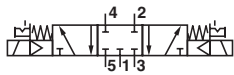
Housing: Aluminium 3.0615 anodized
Pilot flange: Plastic (PBT)
Seals: NBR (Perbunan)



Approval depends on magnetic system, see pages 2, 3 and 4!

Technical data

Standard version, 5/2 or 3/2 indirect acting valves (conversion instructions see page 6)

Symbol	Port size 1	3, 5	2, 4	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	G 1/8	Flange	Solenoid/spring	2 ... 8	750	0,25	1	9710000
	1/4 NPT	1/8 NPT	Flange	Solenoid/spring	2 ... 8	750	0,25	1	9710010
	G 1/4	G 1/8	Flange	Solenoid/solenoid	2 ... 8	750	0,35	2	9711000
	1/4 NPT	1/8 NPT	Flange	Solenoid/solenoid	2 ... 8	750	0,35	2	9711010
	G 1/4	G 1/8	Flange	Solenoid/solenoid mid position APB	2 ... 8	500	0,40	3	9712000
	1/4 NPT	1/8 NPT	Flange	Solenoid/solenoid mid position APB	2 ... 8	500	0,40	3	9712010

*1) When ordering please indicate solenoid, voltage and current type (frequency).

Valve function: APB = All Ports Blocked

Solenoid operators for standard version 971xxx0 only

	Power consumption		Rated current		Ex-Protection	IP-Protection class (to EN 60529)	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimension Nr.	Circuit diagram Nr.	Model
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (mA)	230 V a.c. (mA)								
	1,8	—	70	—	—	IP 65 (with connector)	-15 ... +50	Connector DIN EN 175301-803 Form B *6)	0,1	11	1	3050
	1,6	3,5	30	—	—	IP 65 (with connector)	-15 ... +50	Steckverbinder DIN EN 175301-803 Form A *6)	0,1	12	1	3036
	2	—	85	—	II3G II3D	Ex nA IIC T5 Gc Ex tc IIC T95° Dc IP 65 (with connector)	-15 ... +50	With special connector DIN EN 175301-803 Form A	0,3	12	1	3046
	—	2,0	—	18	II3G II3D	Ex nA IIC T5 Gc Ex tc IIC T95° Dc IP 65 (with connector)	-15 ... +50	With special connector DIN EN 175301-803 Form A	0,3	12	1	3047
	—	5,0	—	22	II2G II2D	Ex mb IIC T4/T5 Gb Ex mb IIC T4 Gb Ex mb tb T130°C Db IP65 (with connector)	-20 ... +50	3 m cable	0,3	13	15	3061
	2,7	—	115	—	II2G II2D	Ex mb IIC T5 Gb Ex mb tb T95°C Db IP65 (with connector)	-20 ... +50	3 m cable	0,3	13	14	3062
	2,7	—	115	—	—	IP 66 (with connector)	-10 ... +50	Connector M12x1, DIN IEC 61076-2-101 *6) Solenoid with yellow LED	0,1	14	17	3071

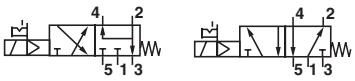
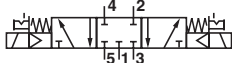
Standard voltages (±10%) 24 V d.c., 230 V a.c. Further versions on request.

*6) Connector is not scope of delivery, see table »Accessories«

Approvals

Model	Approvals ATEX	IECEX	FM	Datasheet
304x	PTB 06 ATEX 2055	—	—	N/de 7.1.555
306x	PTB 03 ATEX 2015	—	—	N/en 7.1.560
307x	EC-Declaration of Conformity	—	—	N/en 7.1.565

Valves for minimal electrical power, incl. Ex i, 5/2 or 3/2 indirect acting valves (conversation instructions see page 6)

Symbol	Port size 1	3, 5	2, 4	Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimension No.	Model *1)
	G 1/4	G 1/8	Flange	Solenoid/spring	2 ... 8	750	0,25	1	9710002
	1/4 NPT	1/8 NPT	Flange	Solenoid/spring	2 ... 8	750	0,25	1	9710012
	G 1/4	G 1/8	Flange	Solenoid/solenoid	2 ... 8	750	0,35	2	9711002
	1/4 NPT	1/8 NPT	Flange	Solenoid/solenoid	2 ... 8	750	0,35	2	9711012
	G 1/4	G 1/8	Flange	Solenoid/solenoid mid position APB	2 ... 8	500	0,40	3	9712002
	1/4 NPT	1/8 NPT	Flange	Solenoid/solenoid mid position APB	2 ... 8	500	0,40	3	9712012

*1) When ordering please indicate solenoid, voltage and current type (frequency).

Valve function: APB = All Ports Blocked

Solenoid actuators

	Power consumption		Rated current		Ex-Protection	IP-Protection class (to EN 60529)	Temperature Ambient/Fluid (°C)	Electrical connection	Weight (kg)	Dimension Nr.	Circuit diagram Nr.	Model
	24 V d.c. (W)	230 V a.c. (VA)	24 V d.c. (mA)	230 V a.c. (mA)								
	1,8	—	70	—	—	IP 65 (with connector)	-15 ... +50	Connector DIN EN 175301-803 Form B *6)	0,1	11	1	3050
	0,7	2,0 *2)	29	4	—	IP 65 (with connector)	-15 ... +50	Connector DIN EN 175301-803 Form A *6)	0,1	12	1	3034
	2	—	85	—	II3G II3D	Ex nA IIC T5 Gc Ex tc IIC T95° Dc IP65 (with connector)	-15 ... +50	With special connector DIN EN 175301-803 Form A	0,3	12	1	3046
	—	5,0	—	22	II2G II2D	Ex mb IIC T4/T5 Gb Ex mb IIC T4 Gb Ex mb tb T130°C Db IP65 (with connector)	-20 ... +50	3 m cable	0,3	13	15	3061
	2,7	—	115	—	II2G II2D	Ex mb IIC T5 Gb Ex mb tb T95°C Db IP65 (with connector)	-20 ... +50	3 m cable	0,3	13	14	3062
	2,7	—	115	—	—	IP 66 (with connector)	-10 ... +50	Connector M12x1, DIN IEC 61076-2-101 *6)	0,1	14	17	3071
								Solenoid with yellow LED				

Standard voltages (±10%) 24 V d.c., 230 V a.c. Further versions on request.

*2) Valves can be operated with DC only. For 230V AC application please use 206V DC coil together with recifier plug; model 0663303

*6) Connector is not scope of delivery, see table »Accessories«

Approvals

Model	Approvals ATEX	IECEX	FM	Datasheet
304x	PTB 06 ATEX 2055	—	—	N/de 7.1.555
306x	PTB 03 ATEX 2015	—	—	N/en 7.1.560
307x	EC-Declaration of Conformity	—	—	N/en 7.1.565

**For intrinsically safe circuits,
Protection class Ex ia IIC T6/T4 Ga (cat. II 2G)**

	Nominal resistance R _N coil (Ω)	Required switching current min. (mA)	Resistance R _w 50 coil (Ω)	Required voltage at terminal R _w 50 (V)	Temperature Ambient/ Fluid(°C)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model
	275	37	345	13,8	T6 -40 ... +50 T4 -40 ... +85	Connector DIN EN 175301-803 Form A *6) IP65 (with connector)	0,2	15	13	3039

When selecting an intrinsically safe power supply, the permissible maximum values according to the Certificate of Conformity should be taken in account.
On the other hand, the low effective inductivity and capacity can be ignored.

*6) Connector not supplied, required connector: model 0570275

Approvals

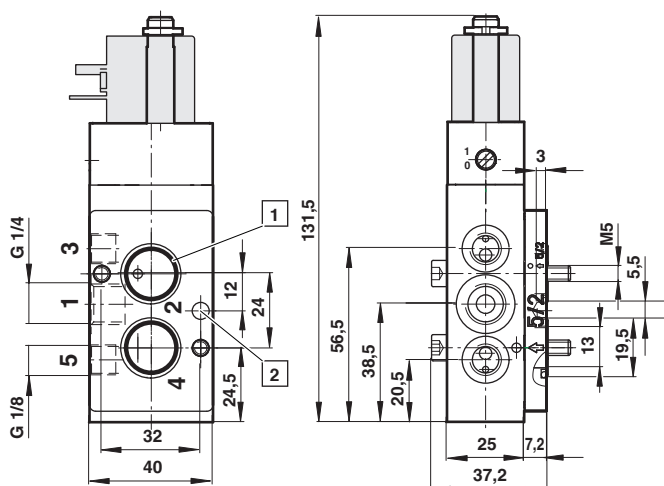
Model	Approvals ATEX	IECEX	FM	Datasheet
3039	PTB 03 ATEX 2134	—	CSA-LR 51090-4	N/en 7.1.550

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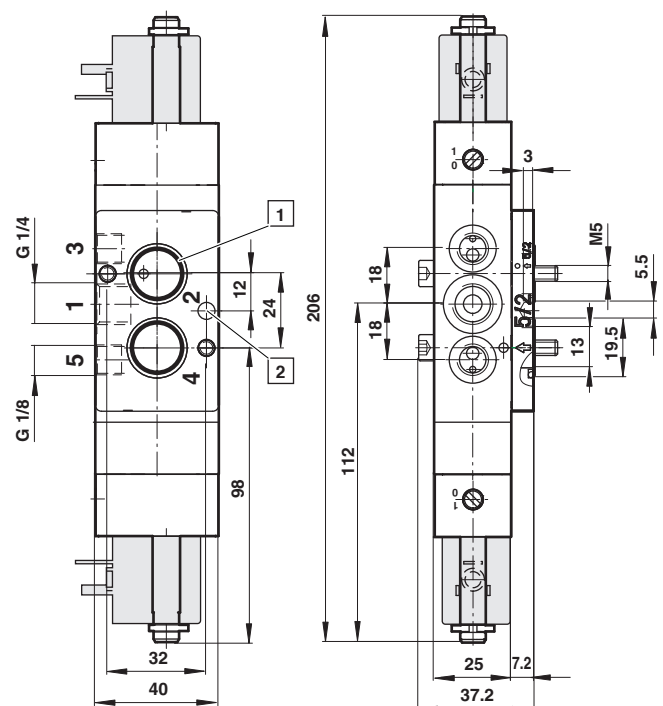
Voltage	Substitute
24 V d.c.	024.0
230 V a.c.	230.5
Solenoids	Substitute
see table	
Manual override	Substitute
Push and lock	0
Push and lock, Ex i version only	2

Connector DIN EN 175301-803	Connector M12 x 1	M12 x 1	Silencer	Flange plate	Yoke
0570275 Form A	0523055 (without cable)	0523056 (90°, without cable)	C/S1 (1/8 NPT)	0612790 (NAMUR single connection plate)	0540593
0663303 Form A (with rectifier)	0523057 (2 m cable)	0523058 (90°, 2 m cable length)	M/S1 (G 1/8)	0612791 (NAMUR-rip use in combination with 0612790, Alu)	
0680003 Form B	0523052 (5 m cable)	0523053 (90°, 5 m cable length)			

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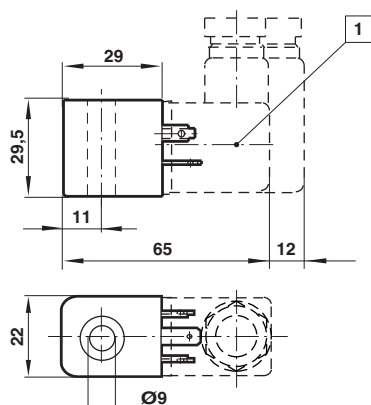
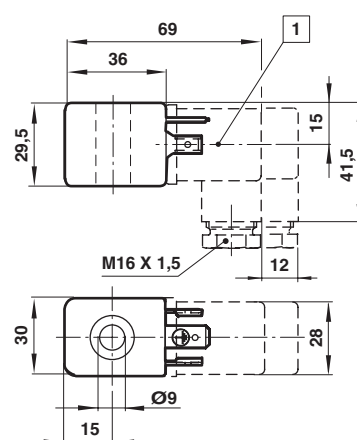
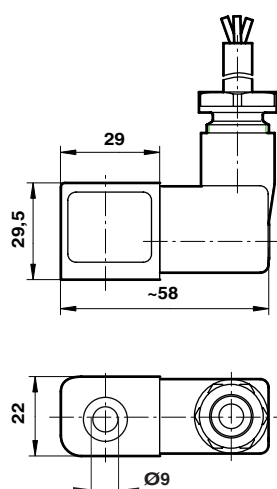
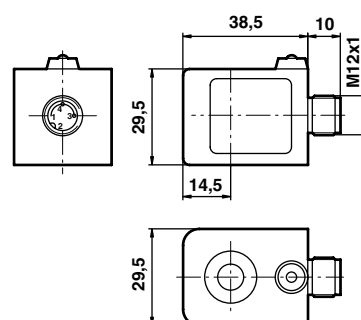


- 1 O ring $\varnothing 6 \times 2$ mm in scope with delivery
- 2 Hole (3 mm deep) coding stud



Dimensions

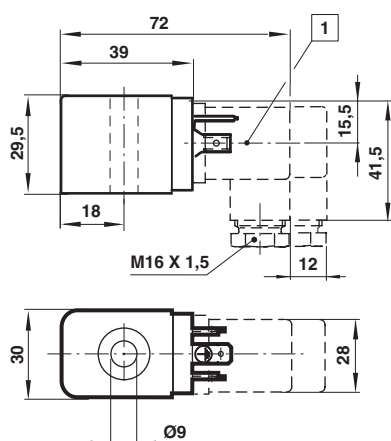
Solenoid operators

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Electrical connection M 12 x 1

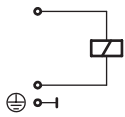
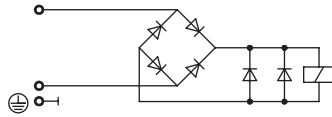
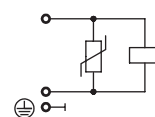
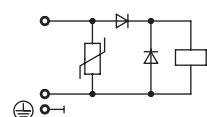
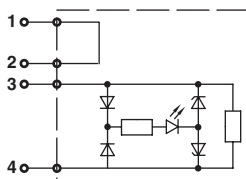


Pin	Signal	Cable
1	+ UB	brown
2	Out 2 (PNP) / analogue 4 to 20 mA	white
3	0 Volt	blue
4	Out 1 (PNP)	black

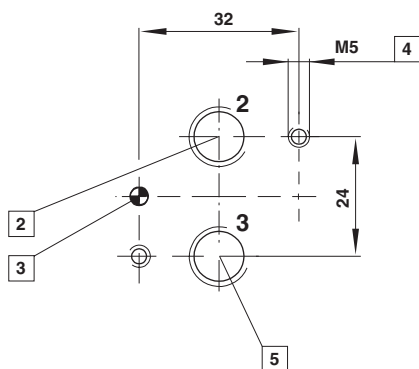
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1 Connector 4 x 90° turnable

Circuit diagrams

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NAMUR hole pattern (driving side)



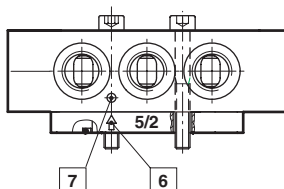
- 2 Port 2 (A)
- 3 Coding stud threaded
- 4 M5 & M6 (10 deep)
- 5 Port 3 (R)

NAMUR quick exhaust module for a better kv-value by exhaust see data sheet 5.4.820

NAMUR interlinking plates in redundancy design for »safety exhausting« and »safety ventilating« see data sheet 5.4.830

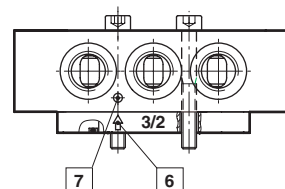
Conversion instructions of 5/2 into 3/2 way function

5/2 way function (original mode of supply)



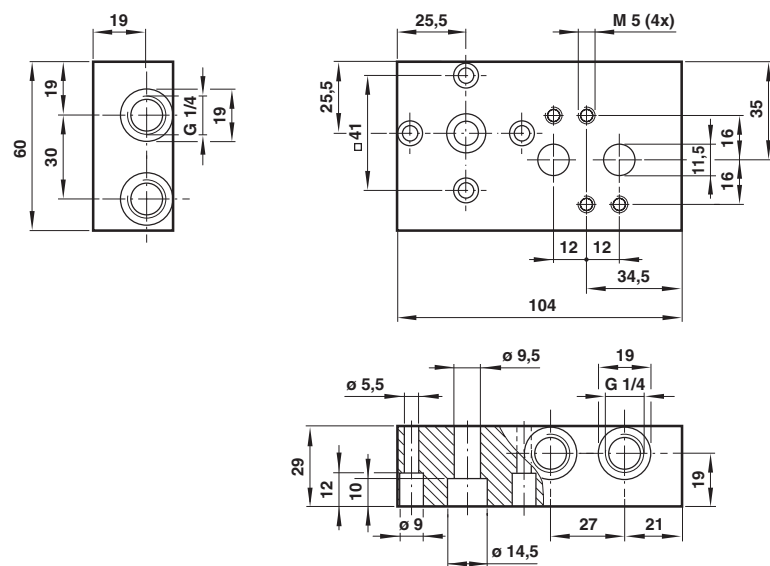
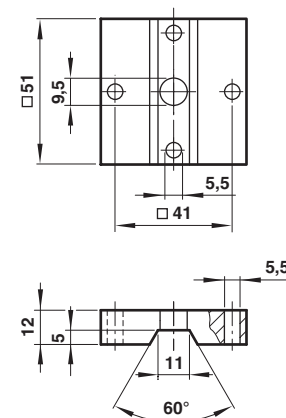
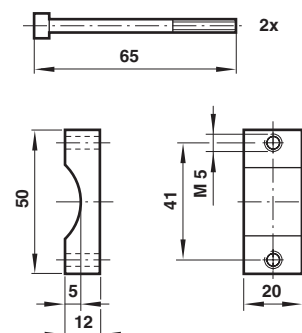
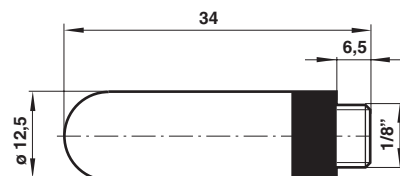
3/2 resp. 5/2 way function according to version by swapping or turning enclosed adaptor plates. Make sure Marker and Arrow do match as shown on above drawing. Original mode of supply: 5/2 function.

3/2 way function



6 Arrow

7 Marker

Single connection plate
Model: 0612790

NAMUR slot
Model: 0612791

Yoke
Model: 0540593

Silencer
Model: M/S1, C/S1

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical features'. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN. Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.