

**3/2-, 5/2- and 5/3 Directional Control Valves**  
**Actuation: Electromagnetic**  
**Indirectly controlled soft seal spool valves**  
**Connection G 1/4, 1/4 NPT**  
**NAMUR Interface**

- For single and double operated actuators
- Exhaust air recirculation (3 way function)
- Crossover-free switching, switch-over function guaranteed even with small cross section air supply
- Safety function in the event of power failure provided by mechanical return spring (monostable design)
- Reversible seal allows 3/2 or 5/2 way function
- Manual override with detent
- Compact design
- Simple design of soft seal spool system
- Easily interchangeable solenoid



### Technical data

**Medium:**

Filtered, non-lubricated and dry compressed air

**Actuation:**

Solenoid operated, indirectly controlled

**Flow direction:**

Fixed

**Mounting position:**

Optional

**Nominal diameter:**

6 mm

**Port size:**

1: G 1/4, 1/4 NPT, 3+5: G 1/8, 1/8-NPT

**Electrical connection:**

Connector interface to DIN 43650 form A and B

**Operating pressure:**

Max. 8 bar

**Temperatures:**

Valve: -25\* to +50 °C

Solenoid: See solenoid table

\* With minus temperatures, use conditioned dry air. If installed in the open protect all connections against the penetration of moisture!

**Material:**

Housing: Aluminium anodized

Pilot flange: Plastic (PBT)

Seals: NBR (Perbunan)

### Ordering example

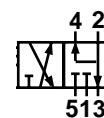
5/2 directional control valve, port size G 1/4, solenoid 24 V DC, with connector DIN 43650 form B, Protection class IP 65

**Type: 9710000.3051.024.00**

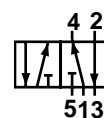
### Connectors

See data sheet **7503364**

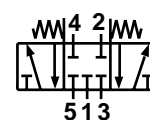
3/2



5/2



5/3



<sup>1)</sup> Oil recommendation: Shell Hydrol DO 32, ESSO Febis K 32 (as of July 1992) or comparable oils with DVI-values <8 (DIN 53521) and ISO viscosity class 32-46 (DIN 51519).

**3/2, 5/2 and 5/3 directional valves, standard design**

(3/2 way or 5/2 way function by reversible seal)

Symbol	Type	Port size			Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensional drawing
		1	3, (5)	2, 4					
	9710000*	G 1/4	G 1/8	Flange	Solenoid/Spring	2 ... 8	750	0,25	M01
	9710010*	1/4 NPT	1/8 NPT	Flange					
	9711000*	G 1/4	G 1/8	Flange	Solenoid/Solenoid	2 ... 8	750	0,35	M02
	9711010*	1/4 NPT	1/8 NPT	Flange					
	9712000*	G 1/4	G 1/8	Flange	Solenoid/Solenoid mid position APB	2 ... 8	500	0,40	M03
	9712010*	1/4 NPT	1/8 NPT	Flange					

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

Valve function: APB = All Ports Blocked

**Solenoid actuators**

	Type	Current draw		Protection class	Temperature		Weight (kg)	Dimensional drawing	Circuit diagram
		24 V DC (W)	230 V AC (VA)		Fluid max. (°C)	Ambience (°C)			
	3050	1,7	5,6/4,3	IP 00 w/o connector	+50	-15... +50	0,06	M04	SB01
	3051	1,7	5,6/4,3	IP 65 with connector DIN 43650 Form B	+50	-15 ... +50	0,08	M04	SB01
	3036	1,6	4,55/3,5	IP 00 w/o connector	+50	-15 ... +50	0,09	M05	SB01
	3037	1,6	4,55/3,5	IP 65 with connector DIN 43650 Form A	+50	-15... +50	0,12	M05	SB01
	3042 <sup>1)</sup>	3,3	–	EEx m II T5 with cable 3 m	+80	-15 ... +50	0,13	M06	SB01
	3043 <sup>1)</sup>	–	3,3	EEx m II T5 with cable 3 m	+80	-15 ... +50	0,13	M06	SB08

Standard voltages 24 V DC, 230 V AC. Other voltages on request.

<sup>1)</sup> Certificate of Conformity PTB No. Ex-95.C.2153 X



### 3/2, 5/2 and 5/3 directional valves for minimal electrical power, inkl. EEx i <sup>1)</sup>

(3/2 way or 5/2 way function by reversible seal)

Symbol	Type	Port size			Actuation	Operating pressure (bar)	Flow (l/min)	Weight (kg)	Dimensional drawing
		1	3, (5)	2, 4					
	9710002*	G 1/4	G 1/8	Flange	Solenoid/Spring	2 ... 8	750	0,25	M01
	9710012*	1/4 NPT	1/8 NPT	Flange		2 ... 8	750	0,25	M01
	9711002*	G 1/4	G 1/8	Flange	Solenoid/Solenoid	2 ... 8	750	0,35	M02
	9711012*	1/4 NPT	1/8 NPT	Flange		2 ... 8	750	0,35	M02
	9712002*	G 1/4	G 1/8	Flange	Solenoid/Solenoid mid position APB	2 ... 8	500	0,40	M03
	9712012*	1/4 NPT	1/8 NPT	Flange		2 ... 8	500	0,40	M03

\* When ordering please indicate solenoid, voltage and current type (frequency).  
Outside free of nonferrous metals

Valve function: APB = All Ports Blocked

### Solenoid actuators

	Type	Current draw		Rated current at		Protection class	Temperature		Weight (kg)	Dimensional drawing	Circuit diagram
		24 V DC (W)	230 V AC (VA)	24 V DC (mA)	230 V AC (mA)		Fluid max. (°C)	Ambience (°C)			
	3034 <sup>2)</sup>	0,7	-	30	-	IP 00 w/o connector	+80	-15 ... +50	0,1	M05	SB01
	3035	0,7	-	30	-	IP 65 with connector DIN 43650 Form A by DC	+80	-15 ... +50	0,1	M05	SB01
	3044 <sup>3)</sup>	0,9	-	30	-	EEx m II T6 with cable 3 m	+80	-15 ... +50	0,4	M06	SB01
	3045 <sup>3)</sup>	-	0,9	-	5	EEx m II T6 with cable 3 m	+80	-15 ... +50	0,4	M06	SB08

Standard voltages 24 V DC, 230 V AC. Other voltages on request.  
Design acc. to VDE 0580, EN 50014/50028. 100% duty cycle.

### For intrinsically safe circuits, protection class EEx ia IIC T6

	Type	Nom. resistance R <sub>N</sub> coil (Ω)	Required switching current (mA)	Resistance R <sub>w 50</sub> coil	Required voltage at terminal R <sub>w 50</sub>	Ambient temperature (°C)	Fluid temperature max. (°C)	Weight (kg)	Dimensional drawing	Circuit diagram
	3039 <sup>4)</sup>	275	37	330	12	-15 ... +50	+80	0,83	M05	SB13

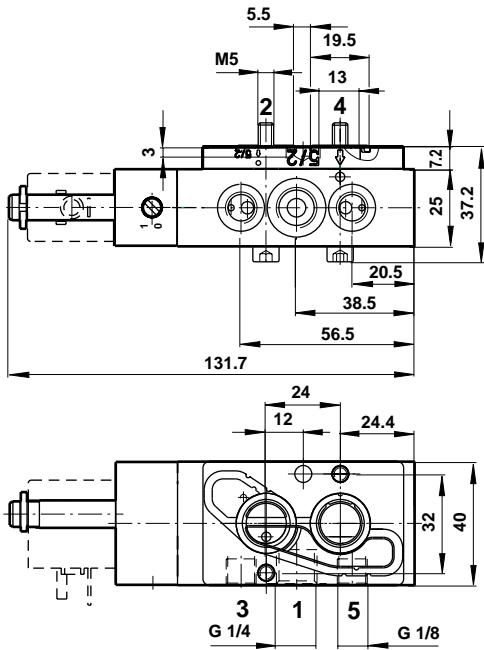
When selecting an intrinsically safe power supply, the permissible maximum values according to the Certificate of Conformity should be taken in account. On the other hand, the low effective inductivity and capacity can be ignored.

- 1) Valves can only be operated with DC solenoids
- 2) Required connector for DC: type 0570275, connector with rectifier for AC or universal current: Type 0663303
- 3) Certificate of Conformity PTB No. Ex-95.C.2153 X
- 4) Certificate of Conformity PTB No. Ex-95.C.2152, CSA-Certificate No. LR 51090-4, FM approved.  
Required connector acc. to DIN 43650 or ISO 4400. Installation acc. to requirements of FM and CSA.

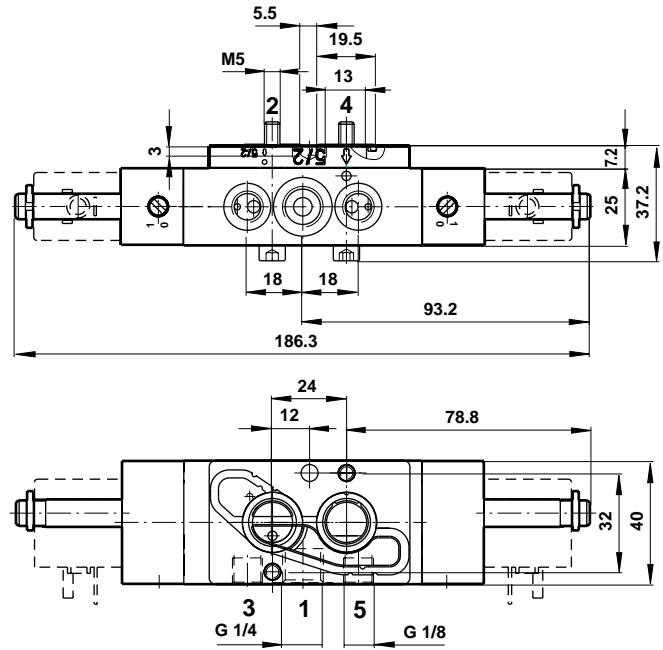


### General dimensions valves

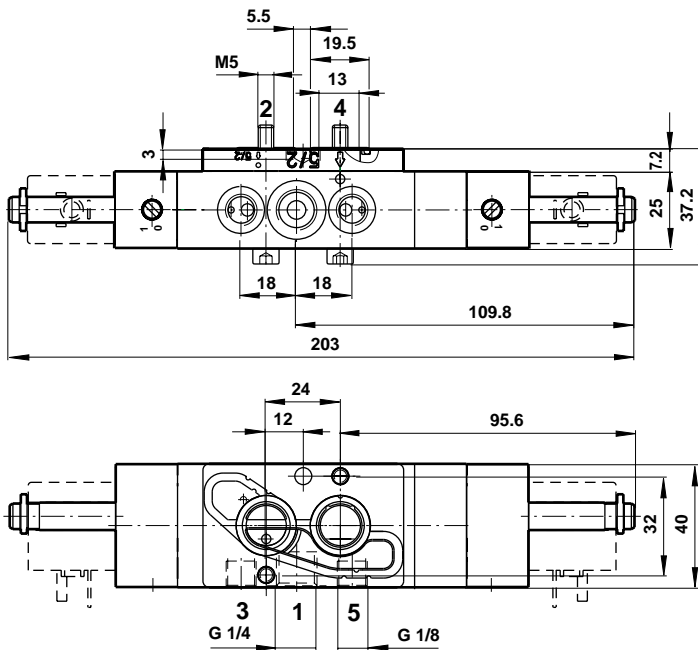
#### M01



#### M02



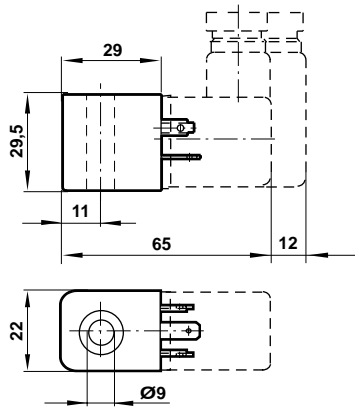
#### M03



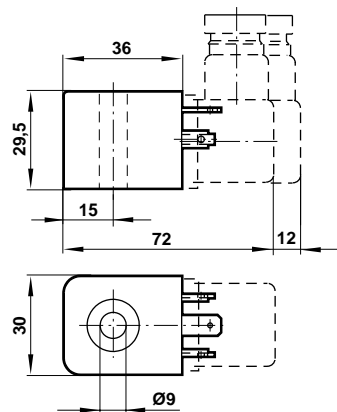


**General dimensions solenoids**

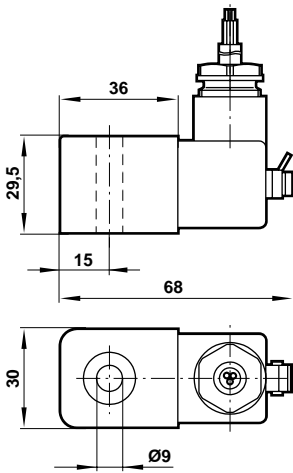
**M04**



**M05**

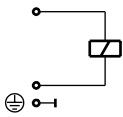


**M06**

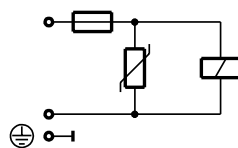


**Circuit diagrams**

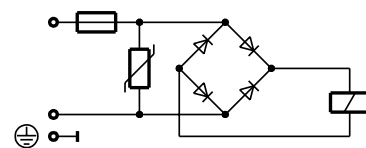
**SB01**



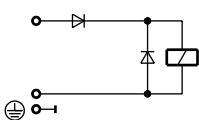
**SB04**



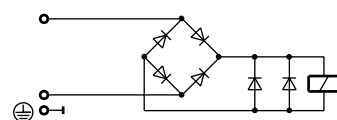
**SB07**



**SB08**

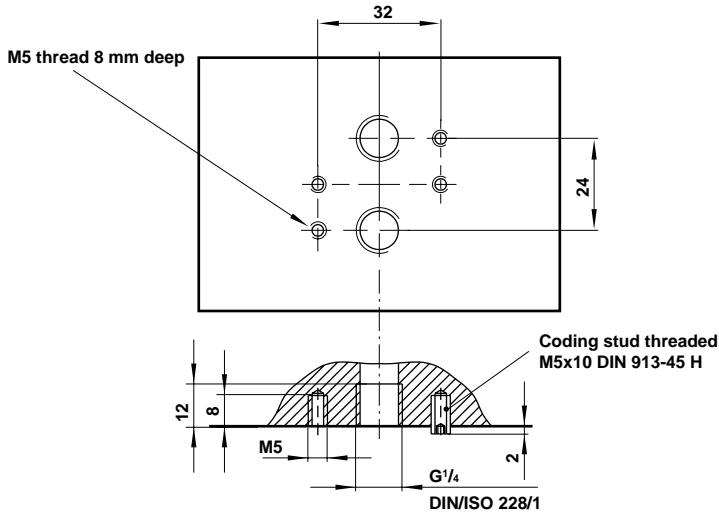


**SB13**





## NAMUR interface



## Accessories

Description	Type	Application	Weight (kg)	Ref. Data Sheet
Flange plate	0559857	Direct attachment to pneumatic linear actuators with NAMUR ribbing and for wall mounting, depending on the tubing position	0,50	7502242
Yoke	0540593	In conjunction with a flange plate for attachment to pneumatic linear actuators with NAMUR pillar (round)	0,1	
Adaptor plate	0559853	Direct attachment to pneumatic rotary actuators with interface corresponding to former type valves	0,18	
Silencer	0014500	Pressure connection G 1/8. Max. back pressure 6 bar	0,01	7501080

## 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 Data'.

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 NORGRÉN.

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 where applicable.



