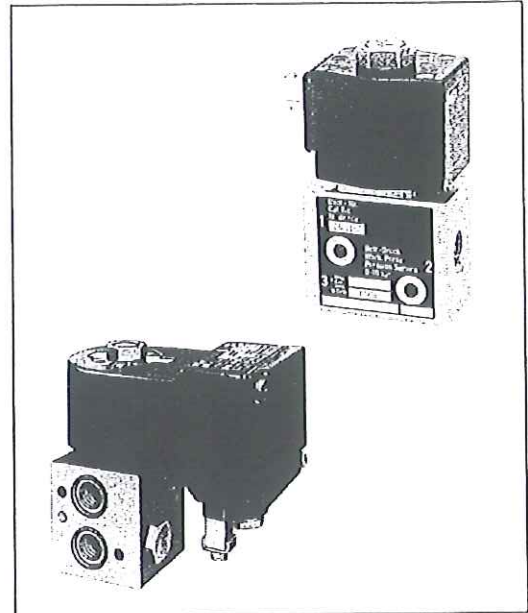


**3/2 Directional Control Valves**  
**Direct solenoid operated poppet valves**  
**Internal thread G1/4, 1/4-18 NPT or**  
**flanged with NAMUR interface**

- Suitable for instrumental air, neutral gaseous and liquid fluids and aggressive gaseous and liquid fluids
- Suitable for outdoor installation if equipped with corresponding solenoid
- AC solenoids with integrated rectifier (40 to 60 Hz)



#### Technical Data

Medium:

Neutral gaseous liquids or aggressive fluids

Operation:

Solenoid operated

Flow Direction:

Optional

Port Size:

G1/4, 1/4 NPT

Operating Pressure:

0 to 10 bar

Operating Temperature:

-25°C to +80°C (NBR)

-10°C to +120°C (FKM) – water up to +95°C

Fluid Temperature:

+60°C

Switching Cycles:

100/min

Mounting:

Optional, preferably vertical

Materials:

Body – stainless steel, brass, hard anodized aluminium

Seat seal – FKM (Viton), NBR (Perbunan), Silicon

Inner parts – stainless steel, brass

#### Ordering Information

3/2 Directional control valve, stainless steel, with seat seal Viton, port size G 1/4, solenoid 24 V DC, with hard anodized casing

Type: 2401127.3972.024.00

#### Options

Namur Interface

Add-on manual override for commissioning and maintenance

Many mounting possibilities

Valve/solenoid combinations to protection class

IP65 and explosion proof with DVGW

approval on request

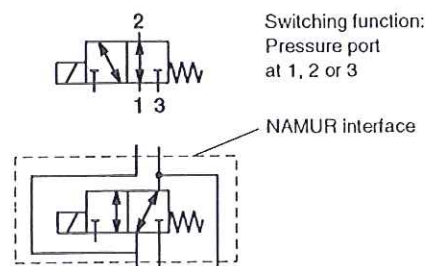
TÜV approval

Solenoids in protection class EEx d IIC T5/T6

Solenoids with CSA-/FM approval

#### Connectors

See data sheet 7503364





24011

## General Information

### Brass valves

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) $\approx$ kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401103	G 1/4	0 to 10	0,340	NBR	M01	0,65	
2401149	G 1/4	0 to 10	0,340	NBR	M01	0,65	DVGW approval solenoids Group A
2401138	1/4 NPT	0 to 10	0,340	NBR	M01	0,65	
2401126	G 1/4	0 to 10	0,340	FKM	M01	0,65	
2401107	G 1/4	0 to 10	0,340	NBR	M01	0,70	Manual override without detent
2401148	1/4 NPT	0 to 10	0,340	NBR	M01	0,70	Manual override without detent
2401119	G 1/4	0 to 10	0,340	NBR	M01	0,70	Manual override with detent
2401140	1/4 NPT	0 to 10	0,340	NBR	M01	0,70	Semi-automatic actuation
2401153	G 1/4	0 to 10	0,340	Silicon	M01	0,65	For ambient temp. down to -40 °C
2401106	1/4 NPT	0 to 10	0,340	Silicon	M01	0,65	For ambient temp. down to -40 °C
2401154	G 1/4	0 to 10	0,340	Silicon	M01	0,70	Semi-automatic actuation, for amb. temp. down to -40 °C

Solenoids Group A and B, see page 4.

Group B solenoids not suitable for valves made before 26/98.

### Aluminium valves NAMUR interface

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) $\approx$ kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401190	G 1/4 NAMUR	0 to 10	0,340	NBR	M02	0,55	DVGW approval solenoids Group A
2401116	G 1/4 NAMUR	0 to 10	0,340	NBR	M02	0,55	Internal parts free of nonferrous metals DVGW approval, solenoids Group A
2401133	G 1/4 NAMUR	0 to 10	0,340	Silicon	M02	0,55	For ambient temp. down to -40 °C
2401191	G 1/4 NAMUR	0 to 10	0,340	NBR	M02	0,55	DVGW approval solenoids Group B
1025254	1/4 NPT NAMUR	0 to 10	0,340	NBR	M02	0,55	
2401109	G 1/4 NAMUR	0 to 10	0,340	NBR	M03	0,55	Port P integrated into flange interface

Solenoids Group A and B, see page 4.

Group B solenoids not suitable for valves made before 26/98.

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

<sup>1)</sup> For gaseous or liquid fluids up to 40 mm<sup>2</sup>/s



### Stainless steel valves

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) → kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401186	G 1/4	0 to 10	0,340	NBR	M01	0,65	Core tube and plunger 1.4104
2401112	1/4 NPT	0 to 10	0,340	NBR	M01	0,65	Core tube and plunger 1.4104

Solenoids Group A and B, see page 4

### Stainless steel valves

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) → kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401127	G 1/4	0 to 10	0,340	FKM	M01	0,65	
2401147	1/4 NPT	0 to 10	0,340	FKM	M01	0,65	
2401155	G 1/4	0 to 10	0,340	Silicon	M01	0,65	For ambient temp. down to -40 °C, DVGW approval
2401168	1/4 NPT	0 to 10	0,340	Silicon	M01	0,65	For ambient temp. down to -40 °C, DVGW approval
2401145	G 1/4	0 to 10	0,340	FKM	M01	0,70	Semi-automatic actuation

Solenoids Group A, see page 4

### Stainless steel valves NAMUR interface

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) → kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401196	G 1/4 NAMUR	0 to 10	0,340	NBR	M02	1,0	Core tube and plunger 1.4104
2401142	G 1/4 NAMUR	0 to 10	0,340	Silicon	M02	1,0	Core tube and plunger 1.4104, for ambient temp. down to -40 °C

Solenoids Group A, see page 4

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




<sup>1)</sup> For gaseous or liquid fluids up to 40 mm<sup>2</sup>/s




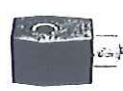


24011

## Solenoids Group A

	Type	Power consumption		Current		Tolerance (%)		Protection class	Temperatures		Dimensional drawing	Circuit diagram No.	Weight (kg)
		24V DC (W)	230V AC (VA)	24V DC (mA)	230V AC (mA)	pull-in current at 100% duty cycle + - 2)			Ambience (°C)	Fluid (°C)			
	0800	16,9	-	703	-	10	25	IP00 w/o connector IP65 with connector <sup>5)</sup>	+60	+80	M06	SB01	0,33
	0801	-	-	-	-	-	-		-	-			
	3803	-	18	-	185	10	25	IP00 w/o connector IP65 with connector <sup>5)</sup>	+60	+80	M07	SB06	0,34
	3804	-	-	-	-	-	-		-	-			
	3980 <sup>1)</sup>	12	-	502	-	10	25	EEx me II T5 EEx me II T6	+60 +45	+60 +45	M08	SB04	0,85
	3981 <sup>1)</sup>	-	14	-	61	10	25	EEx me II T5 EEx me II T6	+60 +45	+60 +45			
	3970 <sup>1)</sup>	7,6	-	315	-	10	20	EEx me II T4 EEx me II T6	+70 +50	+70 +50	M08	SB04	0,85
	3971 <sup>1)</sup>	-	9,0	-	39	10	20	EEx me II T4 EEx me II T6	+70 +50	+70 +50			
	3972 <sup>1)4)</sup>	7,6	-	315	-	10	20	EEx me II T4 EEx me II T6	+70 +50	+70 +50	M08	SB04	0,85
	3826	13,6	-	566	-	10	25	NEMA 4, 4X, 6, 6P, 7, 9	+60		M09	SB01	0,4
	3827	-	15,7	-	68	10	25	NEMA 4, 4X, 6, 6P, 7, 9	+60				

## Solenoids Group B

	Type	Power consumption 24V DC (W)	230V AC (VA)	Current 24V DC (mA)	230V AC (mA)	Tolerance (%) pull-in current at 100% duty cycle		Protection class	Temperatures Ambience (°C)		Fluid (°C)	Dimensional drawing	Circuit diagram No.	Weight (kg)
	0827 <sup>3)</sup> 0813 <sup>3)</sup>	6,8	-	282	-	7	10	IP00 w/o connector IP65 with connector <sup>5)</sup>	+60	+60		M07	SB01	0,33
	3960 <sup>1)</sup>	3,9	-	161	-	10	10	EEx me II T5 EEx me II T6	+60 +60	+80 +60		M08	SB04	0,85
	3961 <sup>1)</sup>	-	4,9	-	21	10	10	EEx me II T5 EEx me II T6	+80 +60	+80 +60		M08	SB07	0,85
	3962 <sup>1)4)</sup>	3,9	-	161	-	10	10	EEx me II T5 EEx me II T6	+80 +60	+80 +60		M08	SB04	0,85
	3824	8,9	-	370	-	10	10	NEMA 4, 4X, 6, 6P, 7, 9	+60			M09	SB01	0,4
	3825	-	9,5	-	41	10	10	NEMA 4, 4X, 6, 6P, 7, 9	+60			M09	SB05	0,4

<sup>1)</sup> This solenoid is fitted with a fuse depending on current.

<sup>2)</sup> With DVGW approved units, minus tolerances are 5% less.

<sup>3)</sup> This solenoid does not have DVGW approval.

<sup>4)</sup> This solenoid is provided with a hard anodized surface as protection against corrosion. It is available only for 24 V DC.

<sup>5)</sup> DIN 43650 Form A



### Brass valves with solenoids in protection class EEx d

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) $\approx$ kv x 1,2)	Seat seal	Dimensional drawing	Weight w/o solenoid (kg)	Variants
2401189.361X	G 1/4	0 to 10	0,340	NBR	M04	0,65	
2401195.361X	1/4 NPT	0 to 10	0,340	NBR	M04	0,65	
2401118.361X	G 1/4	0 to 10	0,340	Silicon	M04	0,65	For ambient temp. down to -40 °C
2401104.361X	1/4 NPT	0 to 10	0,340	Silicon	M04	0,65	For ambient temp. down to -40 °C

### Stainless steel valves with solenoids in protection class EEx d

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) $\approx$ kv x 1,2)	Seat seal	Dimensional	Weight w/o solenoid (kg)	Variants
2401193.361X	G 1/4	0 to 10	0,340	FKM	M04	0,75	
2401194.361X	1/4 NPT	0 to 10	0,340	FKM	M04	0,75	
2401130.361X	G 1/4	0 to 10	0,340	FKM	M04	0,80	Manual override with detent
2401122.361X	1/4 NPT	0 to 10	0,340	FKM	M04	0,80	Manual override without detent
2401113.361X	1/4 NPT	0 to 10	0,340	FKM	M04	0,80	Semi-automatic actuation


### Aluminium valves (NAMUR interface) with solenoids in protection class EEx d

Type *	Port size	Operating pressure <sup>1)</sup> (bar)	kv-value (Cv(US) $\approx$ kv x 1,2)	Seat seal	Dimensional	Weight w/o solenoid (kg)	Variants
2401197.361X	G 1/4 NAMUR	0 to 10	0,340	NBR	M05	0,65	
2401134.361X	G 1/4 NAMUR	0 to 10	0,340	NBR	M05	0,65	DVGW approval

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

<sup>1)</sup> For gaseous or liquid fluids up to 40 mm<sup>2</sup>/s

### Solenoids in protection class EEx d

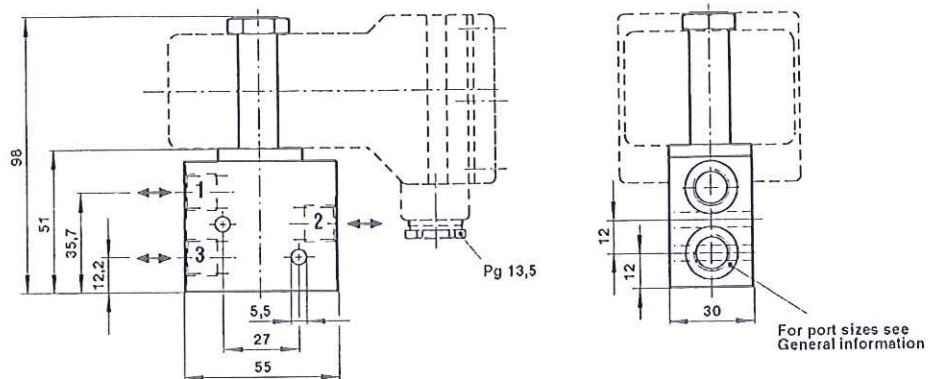
	Type	Power consumption		Current		Tolerance (%)		Protection class	Temperatures		Dimensional drawing	Circuit diagram No.	Weight (kg)
		24V DC (W)	230V AC (VA)	24V DC (mA)	230V AC (mA)	pull-in current	at 100% duty cycle		Ambience (°C)	Fluid (°C)			
	3616	14,3	-	598	-	10	20	EEx d IIC T5 EEx d IIC T6	+60 +40	+60 +40	-	SB02	0,8
	3617	-	16,1	-	70	10	20	EEx d IIC T5 EEx d IIC T6	+60 +40	+60 +40	-	SB06	0,8



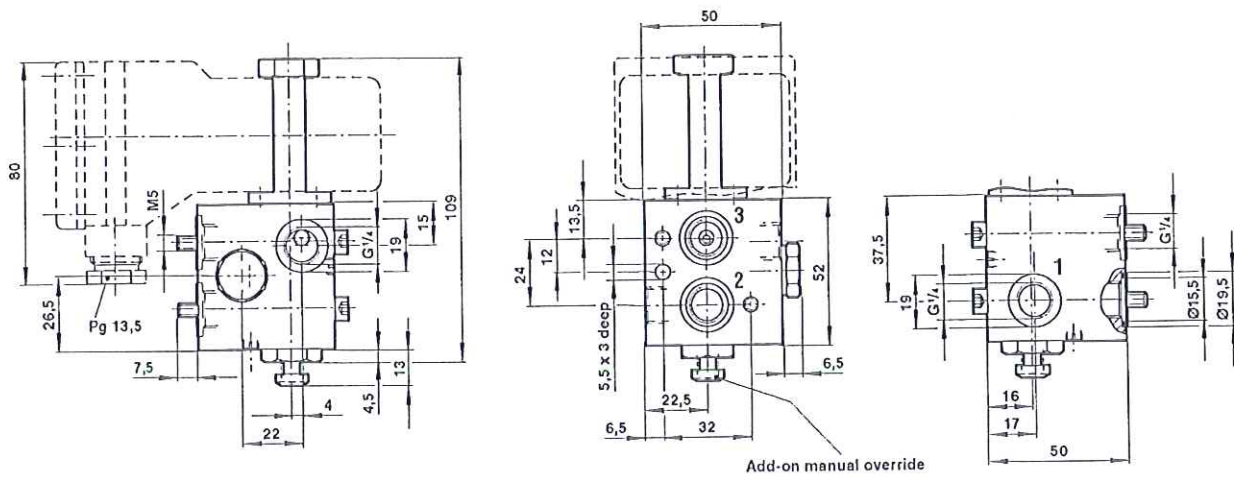
24011

## General dimensions valves

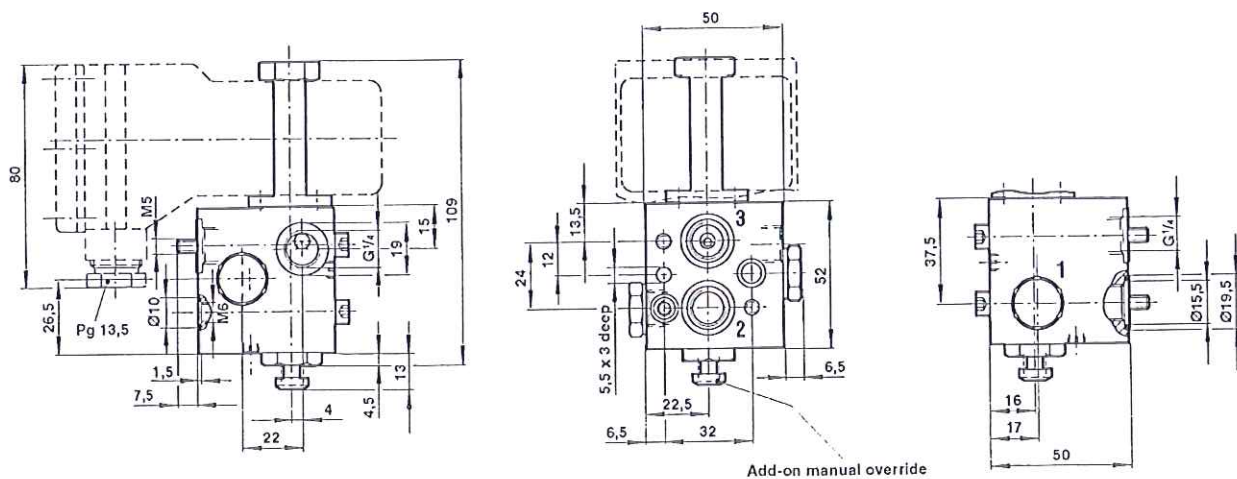
### M01



### M02



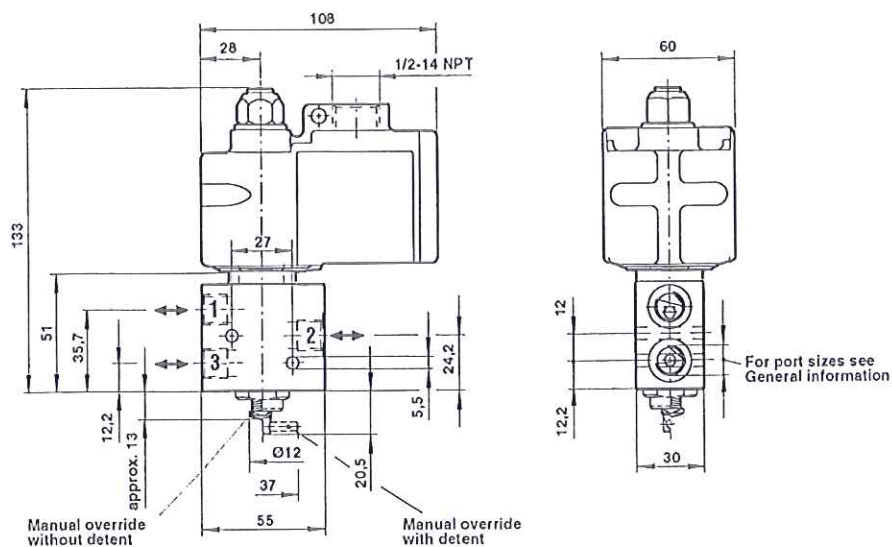
### M03



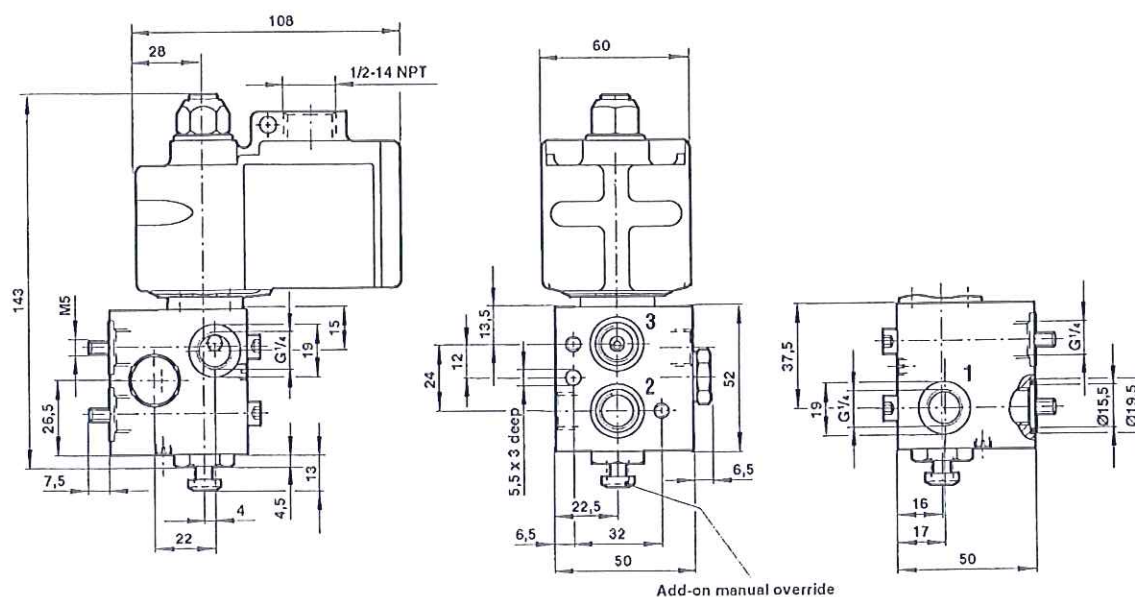




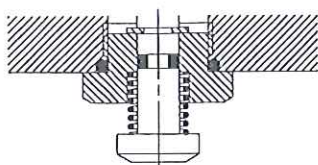
## M04



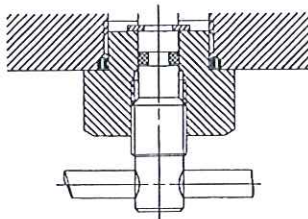
## M05



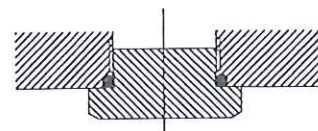
Add-on manual overrides  
without detent  
Type: 0600205



with detent  
Type: 0601765



Threaded plug  
Type: 0602764

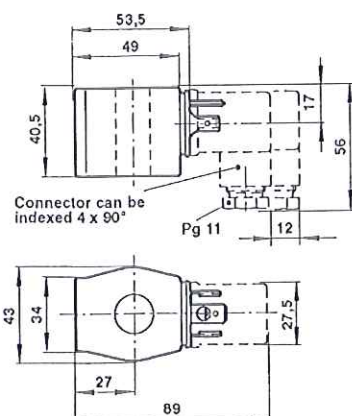




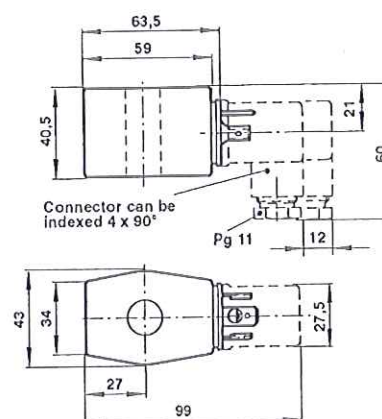
24011

## General dimensions solenoids

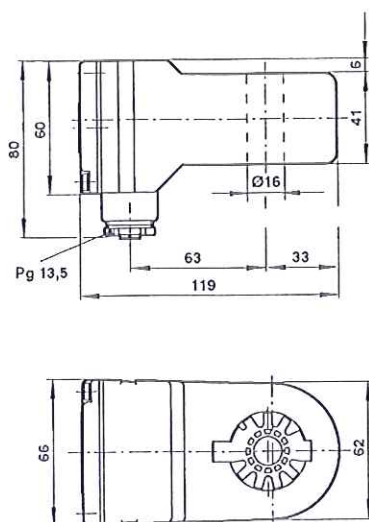
### M06



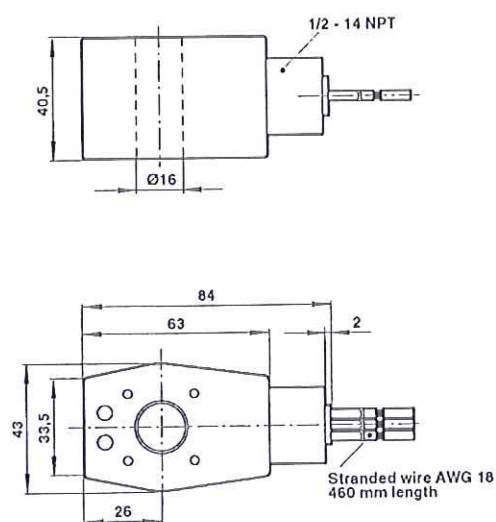
### M07



### M08

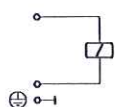


### M09

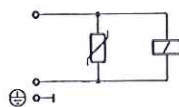


## Circuit diagrams

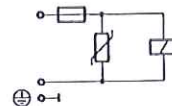
### SB01



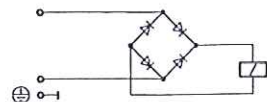
### SB02



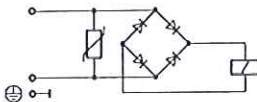
### SB04



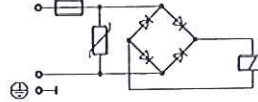
### SB05



### SB06



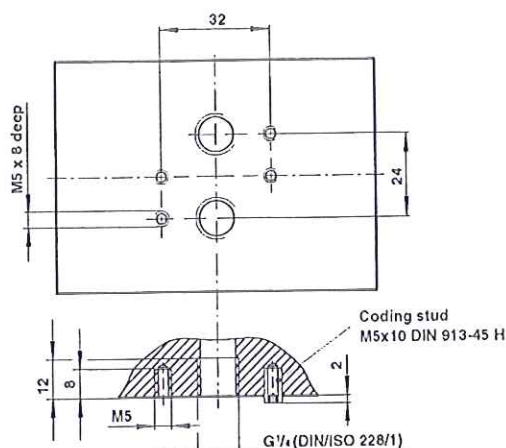
### SB07







## NAMUR interface



## Mounting parts

Designation	Type	Application	Weight (kg)	See 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)	0,10	
Adapter plate	0603216	Direct attachment to older design pneumatic pivot drives, with interface for valve Type 2401180	0,25	

## 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 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 where applicable.



24011





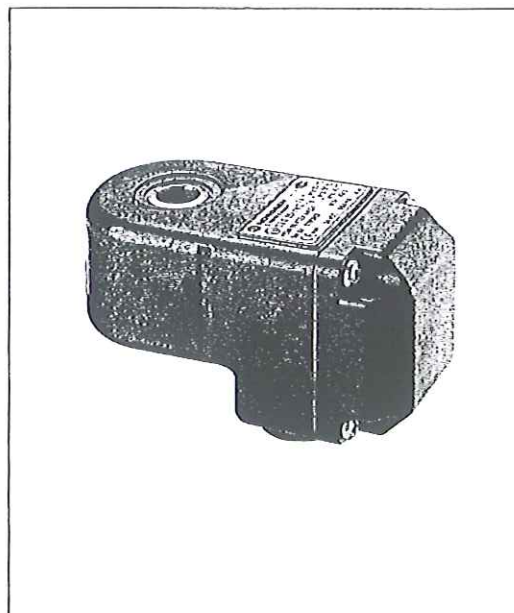
24011





in protection class EEx me  
Category II 2 G  
ATEX

- For 2/2, 3/2, 5/2 and 5/3 valves
- Power consumption from 0.7 up to 12 Watt
- High chemical resistance  
Body: Plastic PPS
- Suitable for outdoor installation
- For high ambient temperature
- Easy mounting of solenoid
- Compact design
- Simple electrical installation



#### Technical data

EC-Type examination certificate:

KEMA 98 ATEX 4452X

Standard voltages:

DC 24 V

UC 24 V

AC 110 V, 230 V (40 - 60 Hz)

further voltages on request

Protection class:

IP 66

Temperatures:

down to -40 °C

Details see table overleaf

#### Ordering information

Solenoid in protection class  
EEx me II T4/T6, voltage 24 V DC,  
power consumption 3.9 W, for core tube  
Ø 13 mm

**Type: 0000000.4210.024.00**


EEx e cable gland M 20x1,5

**Type: 0588819**




## Solenoids 42XX

For core tube Ø 13 mm

	Type	Power consumption		Current at		Protection class	Temperatures	Perm. rel.	Weight	Circuit
		24V DC (W)	230V AC (VA)	24V DC (mA)	230V AC (mA)		fluid or ambient (°C)	air humidity (%)	(kg)	diagram
	4200	0,8	–	33	–	EEx me II T5/T6	-40 to +80 (T5) -40 to +70 (T6)	95	0,6	SB04
	4201	–	1,3	–	6	EEx me II T5/T6	-40 to +80 (T5) -40 to +70 (T6)	95	0,6	SB07
	4210	3,9	–	162	–	EEx me II T4/T6	-40 to +80 (T4) -40 to +55 (T6)	95	0,6	SB04
	4211	–	5,3	–	23	EEx me II T4/T6	-40 to +80 (T4) -40 to +55 (T6)	95	0,6	SB07
	4220	8,9	–	369	–	EEx me II T4/T5	-40 to +65 (T4) -40 to +55 (T5)	95	0,6	SB04
	4221	–	10	–	43	EEx me II T4/T5	-40 to +65 (T4) -40 to +55 (T5)	95	0,6	SB07
	4230	11,4	–	475	–	EEx me II T4/T5	-40 to +50 (T4) -40 to +40 (T5)	95	0,6	SB04
	4231	–	15,2	–	66	EEx me II T4/T5	-40 to +50 (T4) -40 to +40 (T5)	95	0,6	SB07

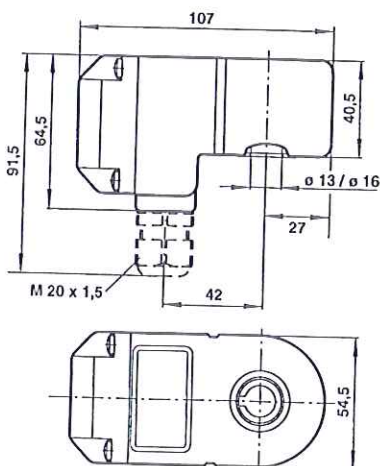
For core tube Ø 16 mm

	Type	Power consumption		Current at		Protection class	Temperatures	Perm. rel.	Weight	Circuit
		24V DC (W)	230V AC (VA)	24V DC (mA)	230V AC (mA)		fluid or ambient (°C)	air humidity (%)	(kg)	diagram
	4260	3,9	–	162	–	EEx me II T4/T6	-40 to +80 (T4) -40 to +55 (T6)	95	0,6	SB04
	4261	–	5,3	–	23	EEx me II T4/T6	-40 to +80 (T4) -40 to +55 (T6)	95	0,6	SB07
	4270	8,9	–	369	–	EEx me II T4/T5	-40 to +65 (T4) -40 to +55 (T5)	95	0,6	SB04
	4271	–	10	–	43	EEx me II T4/T5	-40 to +65 (T4) -40 to +55 (T5)	95	0,6	SB07
	4280	11,4	–	475	–	EEx me II T4/T5	-40 to +50 (T4) -40 to +40 (T5)	95	0,6	SB04
	4281	–	15,2	–	66	EEx me II T4/T5	-40 to +50 (T4) -40 to +40 (T5)	95	0,6	SB07

The solenoids below are suitable for the listed valve series.

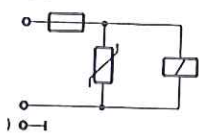
Solenoid	Valve series	Data sheet
4200 / 4201	26360, 80207, 97105	5.4.334, 5.4.337, 5.4.335
4210 / 4211	26360, 80207, 95000, 96000	5.4.334, 5.4.337, 5.4.304, 5.4.305
4220 / 4221	95000, 95100, 96000	5.4.304, 7502898, 5.4.305
4230 / 4231	91000, 95000, 95100, 96000	7503141, 5.4.304, 7502898, 5.4.305
4260	24011	5.4.306
4270 / 4271	25003, 95000, 95100, 96000	5.4.307, 5.4.304, 7502898, 5.4.305
4280 / 4281	25003, 95000, 95100, 96000	5.4.307, 5.4.304, 7502898, 5.4.305

### Dimensional drawing

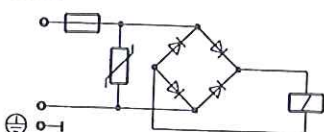


### Circuit diagrams

B04



SB07



### Accessories

Description	Type
Cable gland M20x1,5, protection class EExe (ATEX), Material: nickel plated brass, for cable ø 5mm to 8 mm	0588819

\*\* 5.4.338.02

Subject to alteration

02/01