svs-automation.com

SOLENOID VALVES

Product catalogue

Version: 10/2021

- 2/2 way solenoid valves
- 3/2 way solenoid valves
- Accessories

Family business in second generation

We are a Tyrolean family business in the second generation specialized in pneumatic special solutions. Otto Staudacher founded the company in 1992. Today, his sons Michael, Franz and Hansjörg work together on the successful future of the company.

In the beginning, there was our founder Otto Staudacher's unconditional passion for technology. After two decades as an extremely successful distributor of technical components, he fulfilled his heart's desire in 1992: by founding SFS-Fluidsysteme, he developed special pneumatic solutions for the first time. The three-man operation of yesteryear has since developed into an internationally active family business with around 50 employees. Only one thing has remained the same: the passion with which we reliably find special solutions for the problems and needs of our customers.

Michael, Franz and Hansjörg Staudacher

Milestones of our success

1992

Foundation in Zirl-Dirschenbach

1999

Sales expanded with the establishment of SFS-Fluidsysteme GmbH in Esslingen

2007

Extension in Polling

2009

World economic crisis – emerge strengthened

2011

Spin-off of solenoid valve division

2015

First appearance as an exhibitor at the Hannover Messe fair

2016

A proven specialist for special solutions

2021

Family business in second generation

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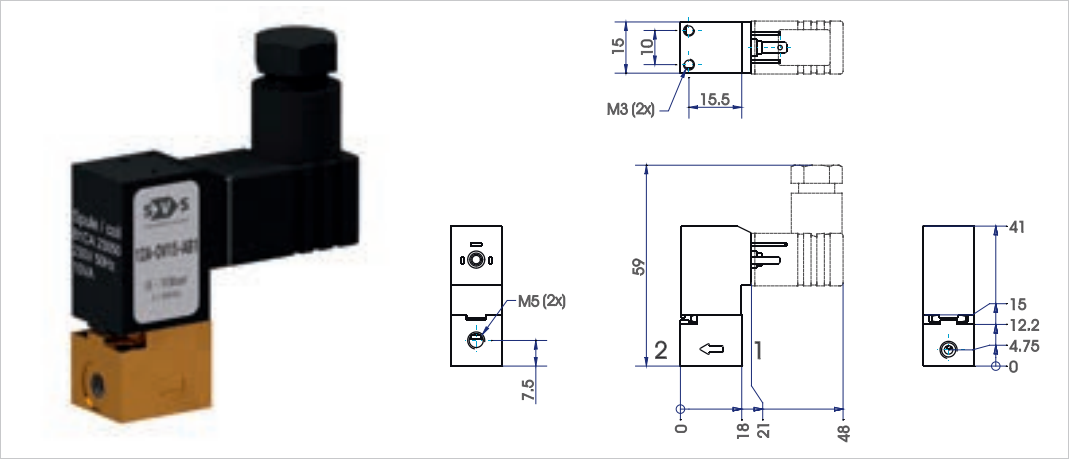
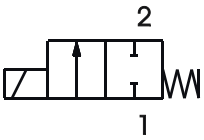
2/2 way solenoid valve normally closed

type 12A, brass body
direct operated, DN 1,0 – 2,0 mm, M5





SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC, coil may be positioned at 0° and 180°
operator	solenoid
ports	M5
ambient temperature	-20 °C to +50 °C
fluid temperature	-10 °C to +80 °C (NBR) or +120 °C (FPM) or +130°C (EPDM)
viscosity	max. 21mm²/s (cst) or 3° E
material	body and guide tube: brass inner parts: stainless steel sealing: see type selection
mounting	2 fixing holes for screws M2.5 or threads M3
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector according to DIN EN 175301-803 (DIN 43650), type C
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage	12V DC, 110V AC
acceptable voltage tolerance	+/-10%
power consumption	for AC 2,8 VA inrush power, 3,3 VA rated power, for DC 2,65 W (cold) 2,3 W (at operating temperature)
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	8 – 15 ms
operating frequency	max. 1800 / min
weight	approx. 60 g.

2/2 way solenoid valve normally closed

type 12A, brass body
direct operated, DN 1,0 – 2,0 mm, M5

type 12A, normally closed, alternating current (~, AC)				
type * (order-nr.)	NW DN (mm)	max. differential pressure (bar)	kv-value (m^3/h)	
12A – 0.10 – AB1CA	1,0	0 – 25	0,032	Valves are suitable for vacuum.
12A – 0.12 – AB1CA	1,2	0 – 16	0,043	
12A – 0.15 – AB1CA	1,5	0 – 10	0,055	
12A – 0.18 – AB1CA	1,8	0 – 5	0,072	
12A – 0.20 – AB1CA	2,0	0 – 4	0,080	

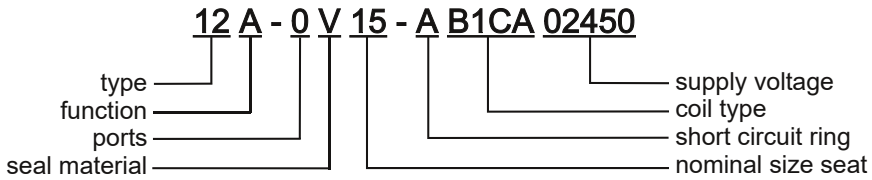
type 12A, normally closed, direct current (=, DC)				
type * (order-nr.)	NW DN (mm)	max. differential pressure** (bar)	kv-value (m^3/h)	
12A – 0.10 – XB1CA	1,0	0 – 13	0,032	Valves are suitable for vacuum.
12A – 0.12 – XB1CA	1,2	0 – 10	0,043	
12A – 0.15 – XB1CA	1,5	0 – 5	0,055	
12A – 0.18 – XB1CA	1,8	0 – 2,5	0,072	
12A – 0.20 – XB1CA	2,0	0 – 2	0,080	

* Type designation (order-nr.) must be completed with sealing material and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 40 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,3% / °C.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 120° C	hot water, oil, petrol, oxygen

standard voltage	Code
24V = (DC)	**02400**
24V ~ (AC, 50Hz)	**02450**
230V ~ (AC, 50Hz)	**23050**

ORDER CODE

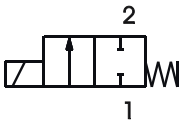


type	type 12
function	A = normally closed
ports	0 = M5
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	10 = 1,0 mm, 12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	connection according to DIN EN 175301-803 (DIN 43650), type C, others see coil data sheet
supply voltage	always 5-digit, see code of standard voltage

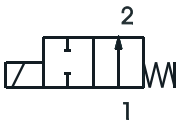
2/2 way solenoid valve normally closed or normally open

type 15, brass body
direct operated, DN 1,2 – 4,0 mm, G1/8

normally closed NC



Normally open NO



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid, or optional by manual override
ports	G1/8
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	body and tube: brass inner parts : stainless steel sealing: see type selection
mounting	2 threads M4 or fixing holes diameter 3,2mm
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	12 – 20ms
weight	see dimension drawing
special equipment on request	stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, explosionproof coil, coils for temperature class H (180°C), other sealing materials, manual override

2/2 way solenoid valve normally closed or normally open

type 15, brass body
direct operated, DN 1,2 – 4,0 mm, G1/8

type 15A, normally closed								
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **						
		coil **C1DA**		coil **C2DA**		coil **C3AA**		kv-value (m^3/h)
		~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
15A–1.12–AC…	1,2	30	20	30	25	30	30	0,045
15A–1.15–AC…	1,5	20	10	25	16	30	25	0,082
15A–1.20–AC…	2,0	10	2	16	8	25	15	0,133
15A–1.25–AC…	2,5	5	0,6	10	3,5	14	8	0,195
15A–1.30–AC…	3,0	3,5	-	6	1,5	9	3	0,250
15A–1.35–AC…	3,5							
15A–1.40–AC…	4,0	1	-	2	0,3	3,5	1,2	0,340

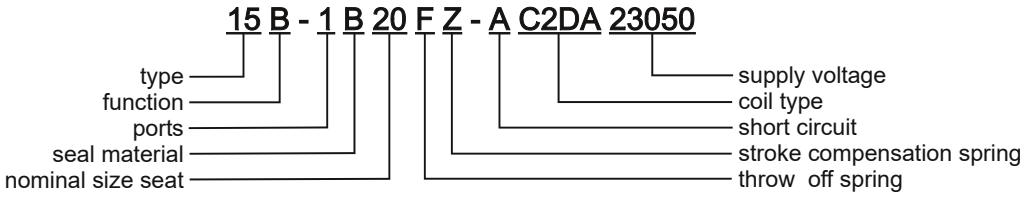
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	**Code**	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 130 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	**Code**
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C1DA	9	5	3,0	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C3AA	17	13	6,3	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

order code	15 B - 1 B 20 F Z - A C2DA 23050
type	type 15
function	A = normally closed, B = normally open
ports	1 = G1/8
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm, 35 = 3,5 mm, 40 = 4,0 mm
throw off spring	F = only normally open
Stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

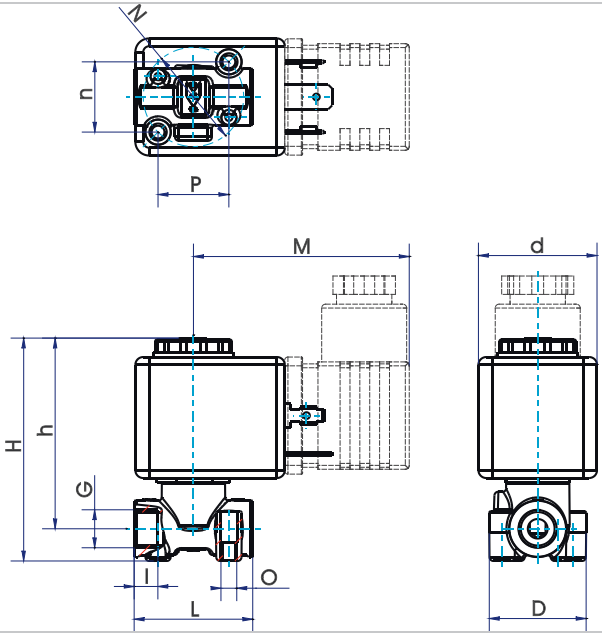


2/2 way solenoid valve normally closed or normally open

type 15, brass body
direct operated, DN 1,2 – 4,0 mm, G1/8

type 15B, normally open								
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **						kv-value (m³/h)
		coil **C1DA**		coil **C2DA**		coil **C3AA**		
		~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
15B-1.12BZ-AC1DA	1,2	11	11					0,045
15B-1.15BZ-AC1DA	1,5	5	5					0,082
15B-1.20BZ-AC1DA	2,0	3,5	3,5					0,133
15B-1.25BZ-AC1DA	2,5	2,5	2,0					0,195
15B-1.30DZ-AC1DA	3,0	2,0	-					0,250
15B-1.35DZ-AC1DA	3,5							
15B-1.40DZ-AC1DA	4,0	1,8	-					0,340
15B-1.12FZ-AC2DA	1,2			16	16			0,045
15B-1.15FZ-AC2DA	1,5			10	10			0,082
15B-1.20FZ-AC2DA	2,0			5,5	5,5			0,133
15B-1.25FZ-AC2DA	2,5			3,5	3,5			0,195
15B-1.30FZ-AC2DA	3,0			4,0	-			0,250
15B-1.35FZ-AC2DA	3,5							
15B-1.40FZ-AC2DA	4,0			2,5	-			0,340
15B-1.12EZ-AC3AA	1,2					22	22	0,045
15B-1.15EZ-AC3AA	1,5					13	13	0,082
15B-1.20EZ-AC3AA	2,0					8	8	0,133
15B-1.25EZ-AC3AA	2,5					5	5	0,195
15B-1.30EZ-AC3AA	3,0					5	-	0,250
15B-1.35EZ-AC3AA	3,5							
15B-1.40EZ-AC3AA	4,0					3	-	0,340

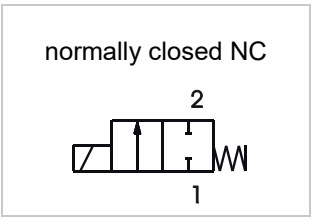
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

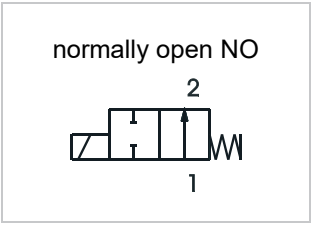


dimension table for type 15 in mm, weight approx. in g																
with coil	G	d	D	type 15 A-		type 15 B-		I	L	M	N	n	O	P	weight (g)	
				h	H	h	H								15A-	15B-
C1DA	G 1/8	22	24.5	49	57	51	59	6	30	51	25.4	18	M4	18	110	110
C2DA															110	110
C3AA		30													165	165

2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2





SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid,
ports	G1/8 – G1/2
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	body brass, inner parts brass and stainless steel, sealing - see type selection
mounting	installation into fixed piping systems or by use of 2 threads on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
fluid	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 64 (bar) up to DN 4mm, PN 25 (bar) from DN 5 – 10mm
response time	depending on operating pressure and fluid
special equipment on request	stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C), higher differential pressure, PTFE seal, manual override

2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2

type 20A, normally closed										
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **							kv-value (m³/h)
			coil **E1AA**		coil **E2AA**	coil **E3AE**		coil **F1AA**		
			~ (50Hz)	= (DC)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
20A-1.15-A…	1,5	G1/8	40	40						0,08
20A-2.15-A…		G1/4								
20A-1.20-A…	2,0	G1/8	35	35						0,13
20A-2.20-A…		G1/4								
20A-1.25-A…	2,5	G1/8	20	20	30	30	35			0,19
20A-2.25-A…		G1/4								
20A-1.30-A…	3,0	G1/8	10	10	25	23	28			0,25
20A-2.30-A…		G1/4								
20A-1.35-A…	3,5	G1/8	10	8	20	20	25			0,30
20A-2.35-A…		G1/4								
20A-1.40-A…	4,0	G1/8	6	4	14	17	22			0,37
20A-2.40-A…		G1/4								
20A-2.50-A…	5,0	G1/4	3,5	1	4	10	6	11	12	0,55
20A-3.50-A…		G3/8								
20A-4.50-A…		G1/2								
20A-2.60-A…	6,0	G1/4	0,9	0,5	1,9	3,5	2,5	7,5	5	0,67
20A-3.60-A…		G3/8								
20A-4.60-A…		G1/2								
20A-3.80-A…	8,0	G3/8	0,5	0,1	0,6	2	1	2,5	1,8	1,25
20A-4.80-A…	8,0	G1/2	0,5	0,1	0,6	2	1	2,5	1,8	1,25
20A-3.100-A…	10,0	G3/8	0,4	0,05	0,3	1,2	0,5	1,7	0,9	1,95
20A-4.100-A…	10,0	G1/2	0,4	0,05	0,3	1,2	0,5	1,7	0,9	2,00

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

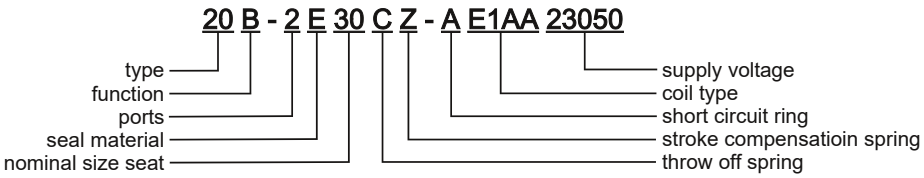
sealing material	**Code**	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 120°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	**Code**
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E2AA	-	-	17	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E3AE	70	32	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
F1AA	70	35	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2

order code	
type	type 20
function	A = normally closed, B = normally open
ports	1 = G 1/8, 2 = G1/4, 3 = G3/8, 4 = G1/2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	nominal size x 10 = specification for order code
throw off spring	C,D,F = only normally open
stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

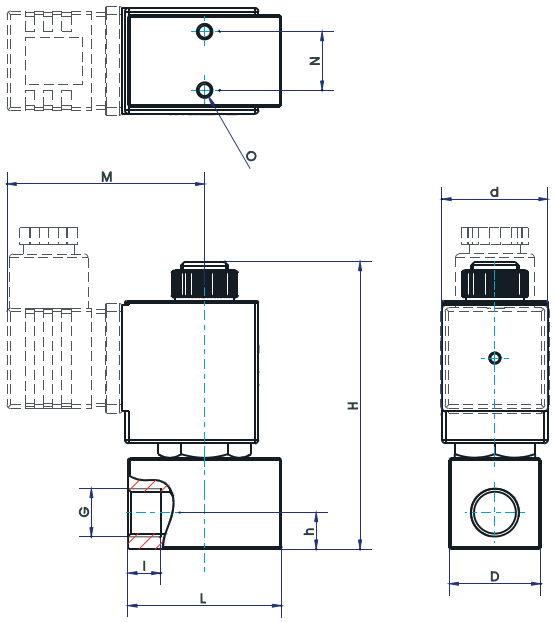
type 20B, normally open

type * (order.-nr.)	NW DN (mm)	connection	maximum differential pressure in bar **				kv-value (m^3/h)
			coil **E1AA**	coil **E3AE**		coil **F1AA**	
			~ (50Hz) and = (DC)	~ (50Hz)	=(DC)	~ (50Hz) and = (DC)	
20B-1.15CZ-AE…	1,5	G1/8	35				0,08
20B-2.15CZ-AE…		G1/4					
20B-1.20CZ-AE…	2,0	G1/8	22				0,13
20B-2.20CZ-AE…		G1/4					
20B-1.25CZ-AE…	2,5	G1/8	13				0,19
20B-2.25CZ-AE…		G1/4					
20B-1.30CZ-AE…	3,0	G1/8	10,5				0,25
20B-2.30CZ-AE…		G1/4					
20B-1.35CZ-AE…	3,5	G1/8	6,5				0,30
20B-2.35CZ-AE…		G1/4					
20B-1.40CZ-AE…	4,0	G1/8	5,5				0,37
20B-2.40CZ-AE…		G1/4					
20B-2.50FZ-A…	5,0	G1/4		5		9	0,54
20B-3.50FZ-A…		G3/8					
20B-4.50FZ-A…		G1/2					
20B-2.60FZ-A…	6,0	G1/4		6		6	0,64
20B-3.60FZ-A…		G3/8					
20B-4.60FZ-A…		G1/2					

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** Higher differential pressure on request.

2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2



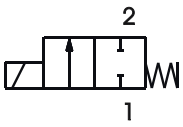
Dimension table for type 20 in mm, weight approx. in g

G	coil	N	O	M	H		d	h	l	L	D	weight (approx. g)	
					type 20A-	type 20B-						type 20A-	type 20B-
1/8	E1	16	M4	55.1	79	86	30	10	7.5	42	25	370	390
	E2			57			35					436	456
	E3			56			36					456	476
	F1			57	90	93	38					526	516
G 1/4	E1			55.1	79	86	30		9			360	380
	E2			57			35					426	446
	E3			56			36					446	466
	F1			57	90	93	38					516	506
G 3/8	E1			55.1	79	86	30	12	10	46		380	400
	E2			57			35					446	466
	E3			56			36					466	486
	F1			57	90	93	38					536	526
G 1/2	E1			55.1	79	86	30		12	54		390	410
	E2			57			35					456	476
	E3			56			36					476	496
	F1			57	90	93	38					546	536

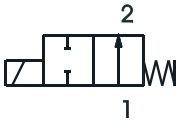
2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

normally closed NC



normally open NO



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable, stainless steel nozzle with wider contact face for lower surface pressure
operator	solenoid
ports	G1/8 – G1/4
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	body brass, inner parts brass and stainless steel, sealing - see type selection
mounting	installation into fixed piping systems or by use of 2 threads on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-207V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 100 (bar)
response time	depending on operating pressure and fluid
special equipment on request	stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C), higher operating pressure, explosionproof coil, manual override

2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

type 21A, normally closed											
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **								kv-value (m³/h)
			coil **E1AA**		coil **E2AA**		coil **E3AE**		coil **F1AA**		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
21A-1.15-A…	1,5	G1/8	50	70	80	100	100	100			0,08
21A-2.15-A…		G1/4									
21A-1.20-A…	2,0	G1/8	30	30	55	70	80	90			0,13
21A-2.20-A…		G1/4									
21A-1.25-A…	2,5	G1/8	20	20	30	35	50	60	60	80	0,19
21A-2.25-A…		G1/4									
21A-1.30-A…	3,0	G1/8	10	10	18	25	35	35	50	60	0,25
21A-2.30-A…		G1/4									
21A-1.35-A…	3,5	G1/8			14	16	20	25	28	36	0,30
21A-2.35-A…		G1/4									
21A-1.40-A…	4,0	G1/8			12	12	16	16	20	25	0,37
21A-2.40-A…		G1/4									

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**C**	max. 80°C	neutral gases and liquids
EPDM	**F**	max. 120°C	hot water, steam, not for oil and grease
PTFE***	**T**	max. 150°C	acids and alkaline solution, steam
FPM	**W**	max. 130°C	oil, petrol, oxygen, acids and bases

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

*** Please keep in mind valves with PTFE seat seal have a leakage up to 1,35cm³/min, especially for low pressures. If the pressure raises the leakage is sinking.

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power*** = (DC) (W)	protection class with/without connector	interface
E1AA*	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E2AA*	42	17	17	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E3AE*	70	32	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
F1AA*	70	35	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

*…For fluid temperatures higher than 120°C, a temperature class H coil is required.

2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

order code	21 B - 2 F 30 F Z - A E1AA 23050 type function ports seal material nominal size seat supply voltage coil type short circuit ring stroke compensatioin spring throw off spring
type	type 20
function	A = normally closed, B = normally open
ports	1 = G 1/8, 2 = G1/4
seal material	C = NBR (Perbunan), F = EPDM, W = FPM, T=PTFE
nominal size seat	nominal size x 10 = specification for order code
throw off spring	C,D,F = only normally open
stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

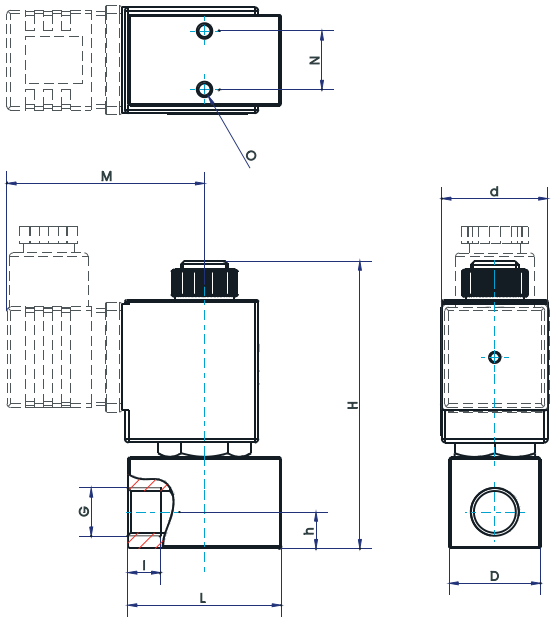
type 21B, normally open

type * (order.-nr.)	NW DN (mm)	connection	maximum differential pressure in bar **	kv-value (m³/h)
21B-1.15FZ-AE3AE…	1,5	G1/8	80	0,08
21B-2.15FZ-AE3AE…		G1/4		
21B-1.20FZ-AE3AE…	2,0	G1/8	45	0,13
21B-2.20FZ-AE3AE…		G1/4		
21B-1.25FZ-.E3AE…	2,5	G1/8	30	0,19
21B-2.25FZ-.E3AE…		G1/4		
21B-1.30FZ-AE3AE…	3,0	G1/8	25	0,25
21B-2.30FZ-AE3AE…		G1/4		
21B-1.35FZ-.E3AE…	3,5	G1/8	18	0,30
21B-2.35FZ-.E3AE…		G1/4		
21B-1.40FZ-AE3AE…	4,0	G1/8	15	0,37
21B-2.40FZ-AE3AE…		G1/4		

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** Higher differential pressure on request.

2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

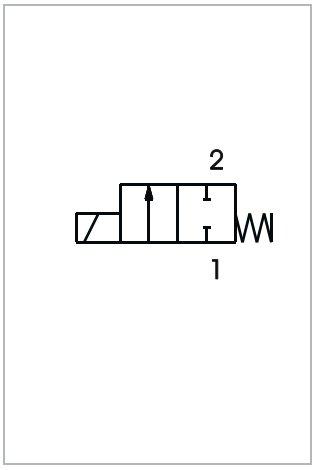


Dimension table for type 21 in mm, weight approx. in g

G	coil	N	O	M	H		d	h	l	L	D	weight (approx. g)	
					type 21A-	type 21B-						type 21A-	type 21B-
G 1/8	E1	16	M4	55.1	79	86	30	10	7.5	42	25	370	390
	E2			57			35					436	456
	E3			56			36					456	476
	EX			54								710	730
	F1			57	90	93	38					526	516
G 1/4	E1			55.1	79	86	30		9			360	380
	E2			57			35					426	446
	E3			56			36					446	466
	EX			54								700	720
	F1			57	90	93	38					516	506

2/2 way solenoid valve normally closed

type 27, brass body
direct operated, DN 16-25mm, G3/8 – G1



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC, coil 360° rotatable
operator	solenoid
ports	G3/8 – G1
ambient temperature	-20 °C to +50 °C
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	body: brass inner parts: stainless steel sealing: see type selection
mounting	installation into fixed piping systems
installation	only with vertical fixed solenoid coil
unit of supply	without connector according to DIN EN 175301-803A (DIN 43650A)
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 16 (bar)
response time	depending on operating pressure and fluid
operating frequency	max. 120 / min
special equipment on request	coil type with cable, manual override, bright nickel-plated or chemical nickel-plated

2/2 way solenoid valve normally closed

type 27, brass body
direct operated, DN 16-25mm, G3/8 – G1

type 27A, normally closed									
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in mbar **						kv-value (m^3/h)
			coil **E3AE**		coil **F1AA**		coil **G1AA**		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
27A – 3. – A....	16	G3/8	320	250	500	340	1100	900	2,95
27A – 4. – A....	16	G1/2	320	250	500	340	1100	900	3,05
27A – 5. – A....	20	G3/4	170	100	280	170	650	480	4,7
27A – 6. – A....	25	G1	100	60	200	90	300	170	7,4

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

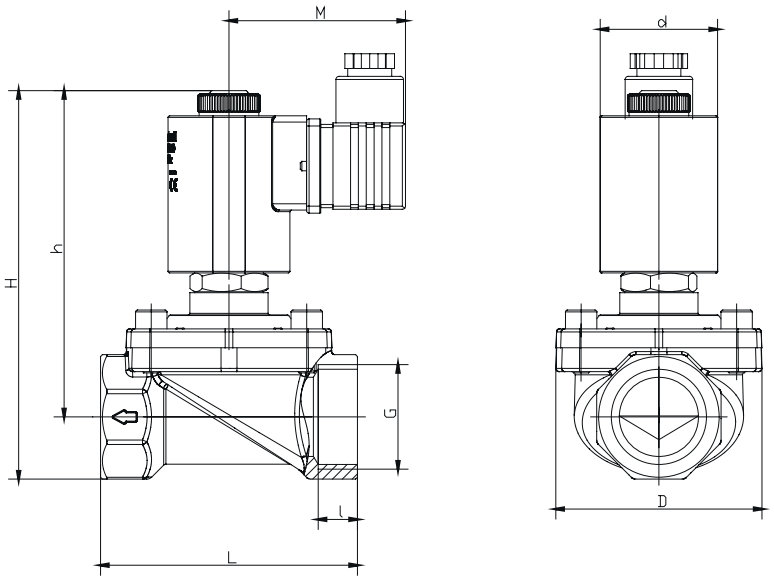
standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E3AE	70	32	27	IP65 / IP00	DIN EN 175301-803A (DIN 43650A)
F1AA	70	35	27		
G1AA	80	40	32		

ORDER CODE	27 A - 6 B - A E3AE 02400 type – function – ports – seal material – short circuit ring – coil type – supply voltage
type	type 27
function	A = normally closed
ports	3 = G3/8, 4 = G1/2, 5 = G3/4, 6 = G1
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed

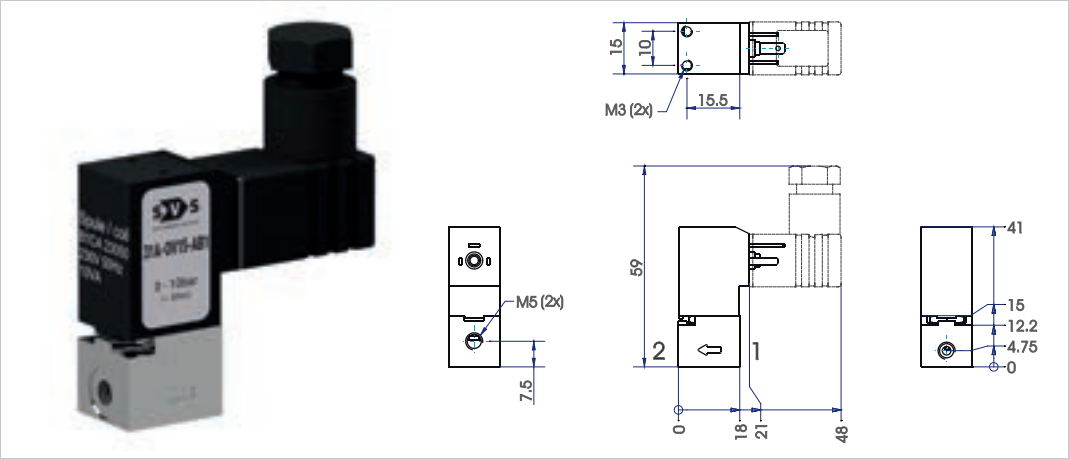
type 27, brass body
direct operated, DN 16-25mm, G3/8 – G1

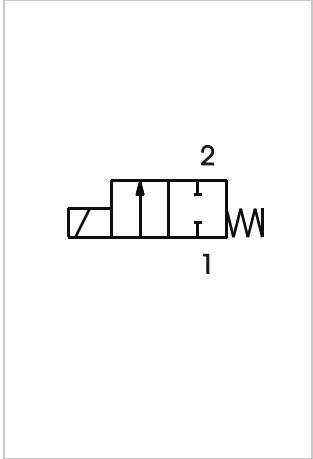


dimension table for type 27A in mm, weight approx. in kg																	
type	G	d			D	h			H	I	L	M			weight (approx. kg)		
		E3	F1	G1		E3	F1	G1				E3	F1	G1	E3	F1	G1
27A-3.-A	G3/8	36	39	46	45	87	97	120	13.5	12	60	54	55	61	0,53	0,54	0,71
27A-4.-A	G1/2														0,51	0,52	0,69
27A-5.-A	G3/4				50	91	101	124	16	11	62				0,55	0,57	0,74
27A-6.-A	G1				65	95	105	128	20		82				0,87	0,88	1,05

2/2 way solenoid valve normally closed

type 31A, stainless steel body (AISI 303),
direct operated, DN 1,2 – 2,0 mm, M5





SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC, coil may be positioned at 0° and 180°
operator	solenoid
ports	M5
ambient temperature	-20 °C to +50 °C
fluid temperature	-10 °C to +80 °C (NBR) or +120 °C (FPM) or +130°C (EPDM)
viscosity	max. 21mm²/s (cst) or 3° E
material	body and guide tube: 1.4305 (AISI303) inner parts: stainless steel 1.4105IL (AISI430 FR) sealing: see type selection
mounting	2 fixing holes for screws M2.5 or threads M3
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector according to DIN EN 175301-803 (DIN 43650), type C
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage	12V DC, 110V AC
acceptable voltage tolerance	+/- 10%
power consumption	for AC 2,8 VA inrush power, 3,3 VA rated power, for DC 2,65 W (cold) 2,3 W (at operating temperature)
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	8 – 15 ms
operating frequency	max. 1800 / min
weight	approx. 58 g

2/2 way solenoid valve normally closed

type 31A, stainless steel body (AISI 303),
direct operated, DN 1,2 – 2,0 mm, M5

type 31A, normally closed, alternating current (~, AC) **				
type * (order-nr.)	NW DN (mm)	max. differential pressure (bar)	kv-value (m^3/h)	
31A – 0.12 – AB1CA …..	1,2	0 – 16	0,043	Valves are suitable for vacuum.
31A – 0.15 – AB1CA …..	1,5	0 – 10	0,055	
31A – 0.20 – AB1CA …..	2,0	0 – 4	0,080	

type 31A, normally closed, direct current (=, DC) ***				
type * (order-nr.)	NW DN (mm)	max. differential pressure** (bar)	kv-value (m^3/h)	
31A – 0.12 – XB1CA …..	1,2	0 – 10	0,043	Valves are suitable for vacuum.
31A – 0.15 – XB1CA …..	1,5	0 – 5	0,055	
31A – 0.20 – XB1CA …..	2,0	0 – 2	0,080	

* Type designation (order-nr.) must be completed with sealing material and supply voltage. (see order code)
** Please note, a short circuit ring made of copper is built in the AC (alternate current) type.
*** At DC voltage all pressure specifications apply to a fluid temperature up to 40 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,3% / °C.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 120° C	hot water, oil, petrol, oxygen

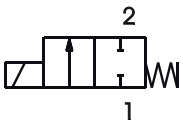
standard voltage	Code
24V = (DC)	**02400**
24V ~ (AC, 50Hz)	**02450**
230V ~ (AC, 50Hz)	**23050**

order code	
	31 A - 0 V 15 - A B1CA 02450 type function ports seal material supply voltage coil type short circuit ring nominal size seat
type	type 31
function	A = normally closed
ports	0 = M5
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	12 = 1,2mm, 15 = 1,5mm, 20 = 2,0mm
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	connection according to DIN EN 175301-803 (DIN 43650), type C, others see coil data sheet
supply voltage	always 5-digit, see code of standard voltage

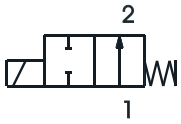
2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

normally closed NC



normally open NO



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/8
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	Body and tube: stainless steel 1.4305 (AISI 303) Inner parts : stainless steel 1.4105IL (AISI 430 FR) sealing: see type selection
mounting	2 threads M3
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
acceptable voltage tolerance	+/- 10%
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	12 – 20ms
special equipment on request	coil type with cable, explosionproof coil, manual override coils for temperature class H (180°C), other sealing materials

2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

type 32A, normally closed								
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **						
		coil **C1DA**		coil **C2DA**		coil **C3AA**		kv-value (m³/h)
		~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
32A – 1.15–.C…	1,5	20	10	25	16	30	25	0,082
32A – 1.20–.C…	2,0	10	2	16	8	25	15	0,133
32A – 1.25–.C…	2,5	5	0,6	10	3,5	14	8	0,195
32A – 1.30–.C…	3,0	3,5	-	6	1,5	9	3	0,250
32A – 1.35–.C…	3,5							
32A – 1.40–.C…	4,0	1	-	2	0,3	3,5	1,2	0,340

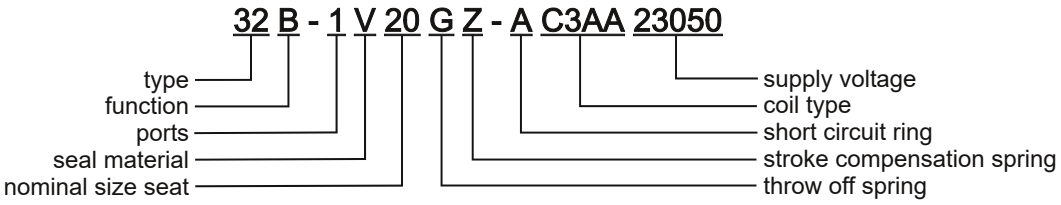
* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 130 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen, acids and bases

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C1DA	9	5	3,0	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C3AA	17	13	6,3	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

ORDER CODE



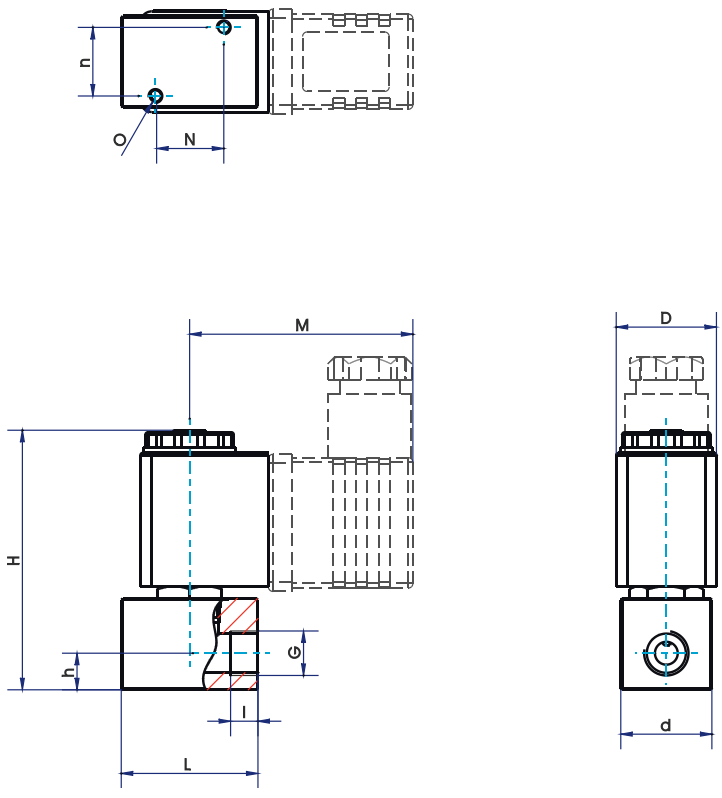
type	type 32
function	A = normally closed, B = normally open
ports	1 = G1/8
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm
throw off spring	only normally open – see specific type (B, F, G)
stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

type 32B, normally open								
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **						
		coil **C1DA**		coil **C2DA**		coil **C3AA**		kv-value (m³/h)
		~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
32B-1.15BZ-.C1DA	1,5	5	5					0,082
32B-1.20BZ-.C1DA	2,0	3,5	3,5					0,133
32B-1.25BZ-.C1DA	2,5	2,0	2,0					0,195
32B-1.30BZ-.C1DA	3,0	2,5	-		1,5			0,250
32B-1.15FZ-.C2DA	1,5			10	10			0,082
32B-1.20FZ-.C2DA	2,0			5,5	5,5			0,133
32B-1.25FZ-.C2DA	2,5			3,5	3,5			0,195
32B-1.30FZ-.C2DA	3,0			4,0	-			0,250
32B-1.15GZ-.C3AA	1,5					13	13	0,082
32B-1.20GZ-.C3AA	2,0					8	8	0,133
32B-1.25GZ-.C3AA	2,5					5	5	0,195
32B-1.30GZ-.C3AA	3,0					5	-	0,250

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

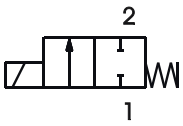


Dimension table for type 32 in mm, weight approx. in g														
with coil	N	n	O	M	H type 32A	H type 32B	h	G	I	L	D	d	weight (g) type 32A	weight (g) type 32B
C1DA	15	15	M3	49	57	58.5	8	G 1/8	6	30	22	20	142	142
C2DA													142	142
C3AA				53.5							30		197	197

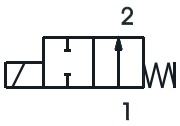
2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303
direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

normally closed NC



normally open NO



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/4 – G3/8
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	Body and tube: 1.4305 (AISI 303) Inner parts: stainless steel 1.4105IL (AISI 430 FR) Sealing: see type selection
mounting	installation into fixed piping systems or by use of 2 threads on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 100 (bar) up to DN 4mm, PN 25 (bar) from DN 5 – 10mm
response time	depending on operating pressure and fluid
special equipment on request	coil type with cable, coils for temperature class H (180°C), higher differential pressure, PTFE seal, manual override, with reducer from G1/4 to G1/8

2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303
direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

type 34A, normally closed										
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **							kv-value (m³/h)
			coil E1AA		coil E2AA	coil E3AE		coil F1AA		
			~ (50Hz)	= (DC)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
34A-2.15-…..	1,5	G 1/4	40	40						0,08
34A-2.20-…..	2,0	G 1/4	35	35						0,13
34A-2.25-…..	2,5	G 1/4	20	20	30	30	35			0,19
34A-2.30-…..	3,0	G 1/4	8	12	25	23	28			0,25
34A-2.35-…..	3,5	G 1/4	10	8	20	20	25			0,30
34A-2.40-…..	4,0	G 1/4	6	4	14	17	22			0,37
34A-2.50-…..	5,0	G 1/4	3,5	1	4	10	6	11	12	0,55
34A-2.60-…..	6,0	G 1/4	0,9	0,5	1,9	3,5	2,5	7,5	5	0,67
34A-3.80-…..	8,0	G 3/8	0,5	0,1	0,6	2	1	2,5	1,8	1,65
34A-3.100-…..	10	G 3/8	0,4	0,05	0,3	1,2	0,5	1,7	0,9	1,95

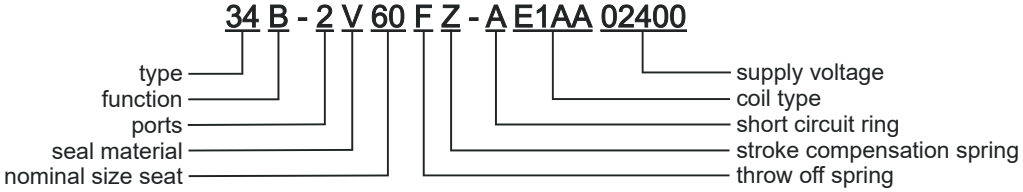
* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 120°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen, acids and bases

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E2AA	-	-	17	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E3AE	70	32	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
F1AA	70	35	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

ORDER CODE



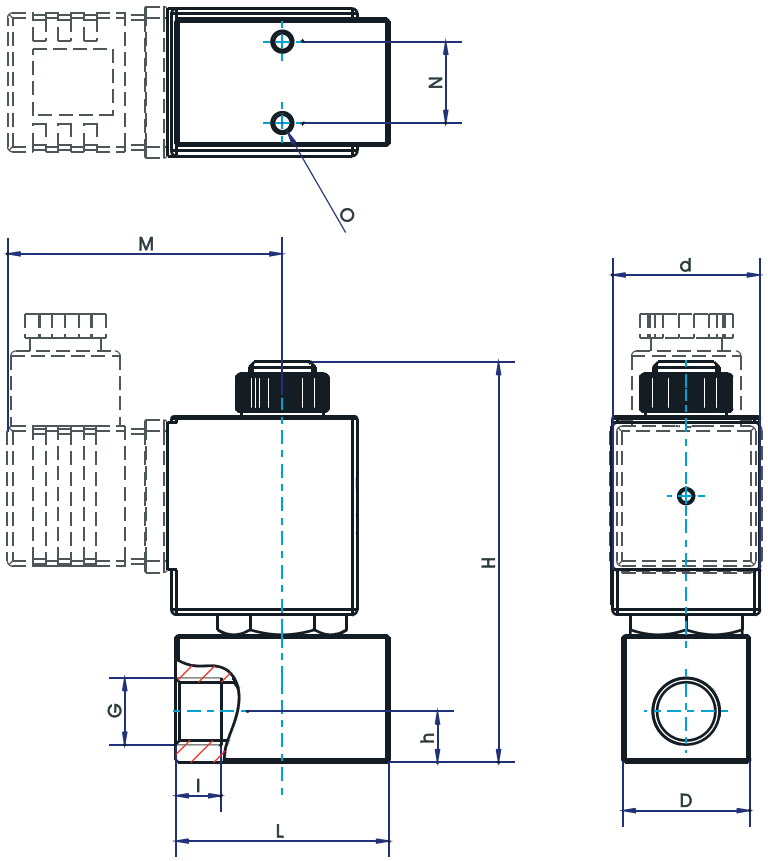
type	type 34
function	A = normally closed, B = normally open
ports	2 = G 1/4, 3 = G 3/8
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat	15 = 1,5 mm, 20 = 2,0 mm, 30 = 3,0 mm, 40 = 4,0 mm, 80 = 8,0 mm, 100 = 10,0 mm
throw off spring	only normally open – see specific type
stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring, B = solid silver C = copper gold-plated, D = copper chemical nickel-plated
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303
direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

type 34B, normally open							
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				kv-value (m³/h)
			coil **E1AA**	coil **E3AE**		coil **F1AA**	
			~ (50Hz) and = (DC)	~ (50Hz)	= (DC)	~ (50Hz) and = (DC)	
34B-2.15CZ-.E...	1,5	G1/4	35				0,08
34B-2.20CZ-.E...	2,0		22				0,13
34B-2.25CZ-.E...	2,5		13				0,19
34B-2.30CZ-.E...	3,0		10,5				0,25
34B-2.35CZ-.E...	3,5		6,5				0,30
34B-2.40CZ-.E...	4,0		5,5				0,37
34B-2.50FZ-.....	5,0			9		9	0,55
34B-2.60FZ-.....	6,0			6		6	0,67

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** Higher differential pressures on request.

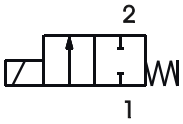


Dimension table for type 34 in mm, weight approx. in g													
G	coil	N	O	H		M	d	h	l	L	D	Weight (g)	
				34A-	34B-							34A-	34B-
G 1/4	E1	16	M4	79	85.5	55	30	10	9	42	25	333	353
	E2					57	35					399	419
	E3					56	36					419	439
	F1			90	98	57	38					489	479
G 3/8	E1			79	85.5	55	30	12	10	45	32	325	345
	E2					57	35					391	411
	E3					56	36					411	431
	F1			90	98	57	38					481	471

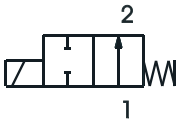
2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

normally closed NC



normally open NO



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable, stainless steel nozzle with wider contact face for lower surface pressure
operator	solenoid
ports	G1/4
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	Body and tube: 1.4305 (AISI 303= Inner parts: stainless steel 1.4105IL (AISI 430 FR) Sealing: see type selection
mounting	installation into fixed piping systems or by use of 2 threads on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 100 (bar) up to DN 4mm
response time	depending on operating pressure and fluid
special equipment on request	coil type with cable, coils for temperature class H (180°C), higher differential pressure, manual override

2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

type 35A, normally closed											
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **								kv-value (m³/h)
			coil E1AA		coil E2AA		coil E3AE		coil F1AA		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
35A-2.15-A…	1,5	G 1/4	50	70	80	100	100	100			0,08
35A-2.20-A…	2,0		30	30	55	70	80	90			0,13
35A-2.25-A…	2,5		20	20	30	35	50	60	60	80	0,19
35A-2.30-A…	3,0		10	10	18	25	35	35	50	60	0,25
35A-2.35-A…	3,5				14	16	20	25	28	36	0,30
35A-2.40-A…	4,0				12	12	16	16	20	25	0,37

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**C**	max. 80°C	neutral gases and liquids
EPDM	**F**	max. 120°C	hot water, steam, not for oil and grease
PTFE***	**T**	max. 150°C	acids and alkaline solution, steam
FPM	**W**	max. 130°C	oil, petrol, oxygen, acids and bases

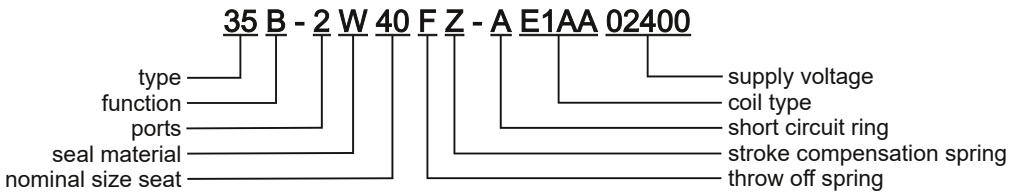
standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

*** Please keep in mind valves with PTFE seat seal have a leakage up to 1,35cm³/min, especially for low pressures. If the pressure raises the leakage is sinking.

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA*	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E2AA*	42	19	17	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E3AE*	70	32	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
F1AA*	70	35	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

*…For fluid temperatures higher than 120°C, a temperature class H coil is required.

ORDER CODE



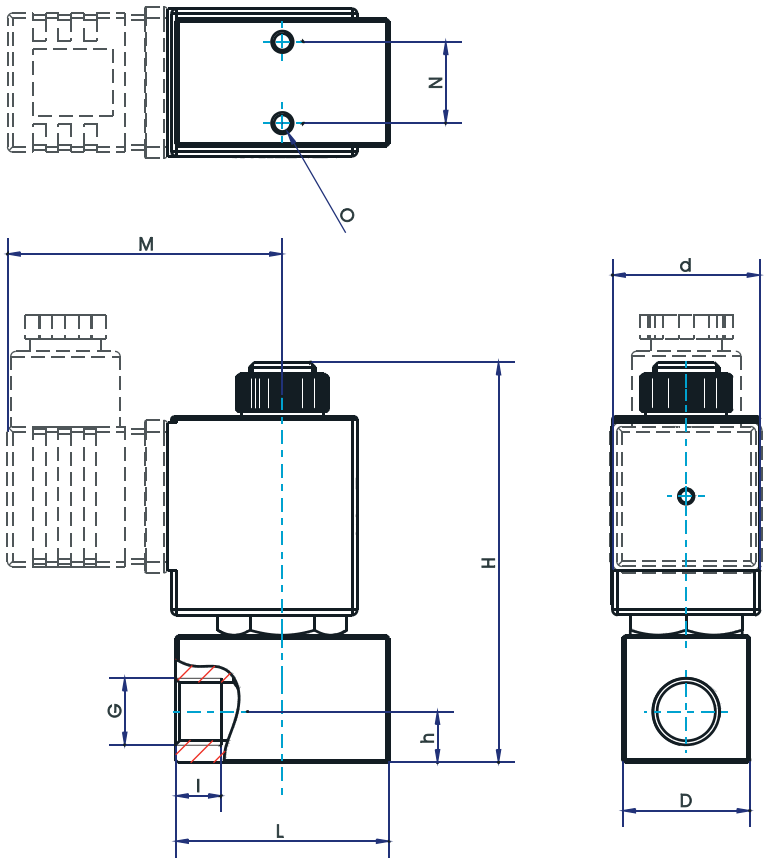
type	type 35
function	A = normally closed, B = normally open
ports	2 = G 1/4, 3 = G 3/8
seal material	C = NBR (Perbunan), F = EPDM, W = FPM, T=PTFE
nominal size seat	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm, 35 = 3,5 mm, 40 = 4,0 mm
throw off spring	only normally open – see specific type
stroke compensation spring	Z = only normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

type 35B, normally open				
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **	kv-value (m³/h)
35B-2.15CZ-.E3AE …	1,5	G1/4	85	0,08
35B-2.20CZ-.E3AE …	2,0		45	0,13
35B-2.25CZ-.E3AE …	2,5		30	0,19
35B-2.30CZ-.E3AE …	3,0		25	0,25
35B-2.35DZ-.E3AE …	3,5		18	0,30
35B-2.40DZ-.E3AE …	4,0		15	0,37

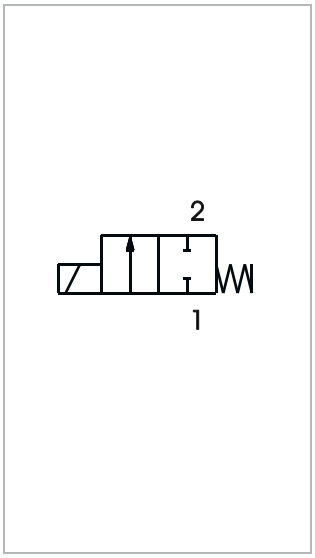
* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** Higher differential pressures on request.



Dimension table for type 35 in mm, weight approx. in g													
G	coil	N	O	H		M	d	h	l	L	D	Weight (g)	
				35A-	35B-							35A-	35B-
G 1/4	E1	16	M4	79	85.5	55	30	10	9	42	25	333	353
	E2					57	35					399	419
	E3					56	36					419	439
	F1			90	98	57	38	12	10	45	32	489	479

2/2 way solenoid valve normally closed

type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1



SPECIFICATION	
general	
type of construction	2/2-poppet valve, normally closed NC, coil 360° rotatable
operator	solenoid
ports	G1/2 – G1
ambient temperature	-20 °C to +50 °C
fluid temperature	dependent on sealing material and coil
viscosity	max. 37 mm²/s (cst) or 5° E
material	Body and tube: stainless steel 1.4301 (AISI 304), 1.4305 (AISI 303) and 1.4105IL (AISI 430 FR) inner parts: stainless steel 1.4105IL (AISI 430 FR) sealing: see type selection
mounting	installation into fixed piping systems
installation	only with vertical fixed solenoid coil
unit of supply	without connector according to DIN EN 175301-803A (DIN 43650A)
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 16 (bar)
response time	depending on operating pressure and fluid
special equipment on request	coil type with cable, manual override

2/2 way solenoid valve normally closed

type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1

type 37A, normally closed									
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in mbar **						kv-value (m^3/h)
			coil **E3AE**		coil **F1AA**		coil **G1AA**		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
37A – 3. – A....	16	G3/8	320	250	500	340	1100	900	2,95
37A – 4. – A....		G1/2							3,05
37A – 5. – A....	20	G3/4	170	100	280	170	650	480	4,70
37A – 6. – A....	25	G1	100	60	200	90	300	170	7,40

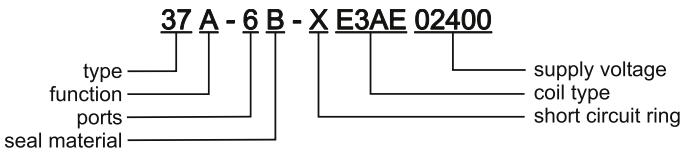
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E3AE	70	32	27	IP65 / IP00	DIN EN 175301-803A (DIN 43650 A)
F1AA	70	35	27		
G1AA	80	40	32		

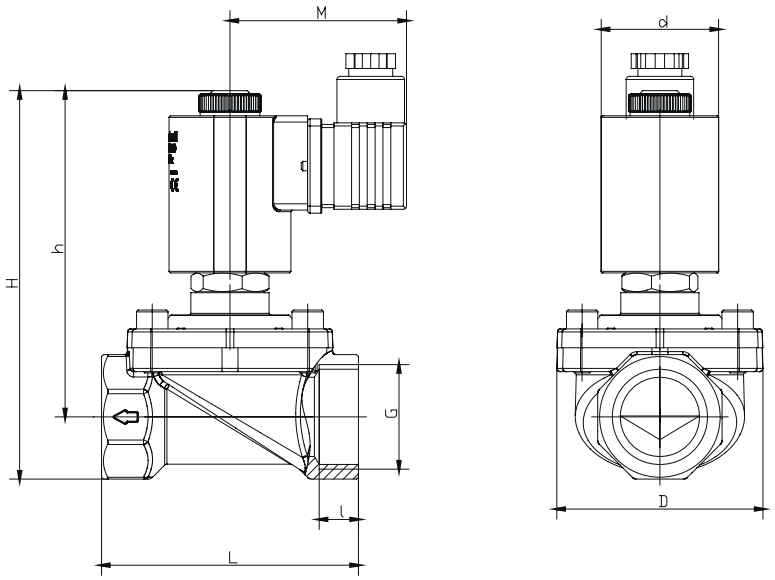
ORDER CODE



type	type 37
function	A = normally closed
ports	4 = G1/2, 5 = G3/4, 6 = G1
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed

type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1

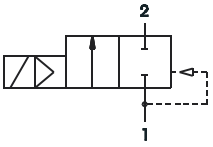


dimension table for type 37A in mm, weight approx. kg

type	G	d			D	h			H	l	L	M			weight (approx. kg)		
		E3	F1	G1		E3	F1	G1				E3	F1	G1	E3	F1	G1
37A-3.-A	G3/8	36	39	46	45	87	97	120	13,5	12	60	54	55	61	0,50	0,52	0,71
37A-4.-A	G1/2														0,48	0,50	0,69
37A-5.-A	G3/4				50	91	101	124	16	11	62				0,52	0,54	0,71
37A-6.-A	G1				65	95	105	128	20		82				0,81	0,82	0,99

2/2 way solenoid valve normally closed

type 50A
pilot operated, DN 10mm, G3/8“ – G1/2“, body brass



function A
(normally closed)

SPECIFICATION	
general	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC, coil 360° rotatable
operator	solenoid
ports	G3/8, G1/2
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	body: brass, tube at type 50A-..-AC2.. brass, at type 50A-..-AE1… stainless steel inner parts: stainless steel, sealing: see type selection
mounting	2 threads M4 on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don’t attack the used material
max. body housing pressure	PN 25 (bar)
response time	depending on operating pressure and fluid
special equipment on request	Stainless steel 1.4301 (AISI304) in place of brass, bright nickel-plated or chemical nickel-plated

2/2 way solenoid valve normally closed

type 50A

pilot operated, DN 10mm, G3/8“ – G1/2“, body brass

type 50A, normally closed							
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				kv-value (m³/h)
			coil **C2DA**		coil **E1AA**		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
50A - 3. - A....	10	G3/8	0,02 – 6	-	0,02 – 12	0,02 – 10	1,7
50A - 4. - A....		G1/2					1,7

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

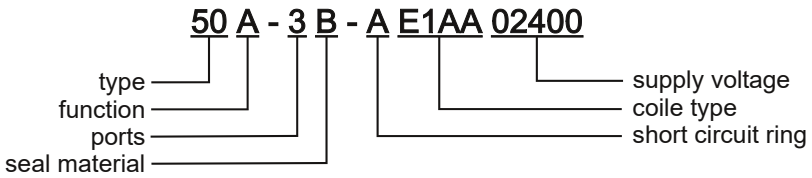
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. Valves are suitable for vacuum.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C2DA	13	10	-	IP65 / IP00	Connector (DIN 43650) type B industrial standard
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

ORDER CODE

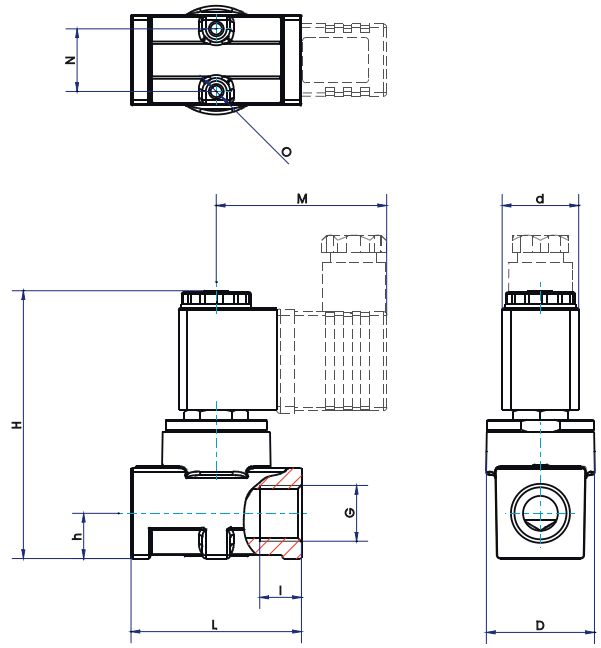


type	type 50
function	A = normally closed
ports	3 = G3/8, 4 = G1/2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed

type 50A

pilot operated, DN 10mm, G3/8“ – G1/2“, body brass

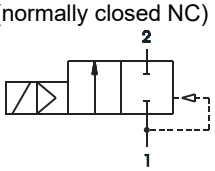


Dimension tale for type 50A in mm, weight approx. in kg											
type	G	d	D	h	H	l	L	M	N	O	weight (kg)
50A-3.-AC2DA	G3/8	22	32,5	13	76,5	12	49	50	18	M4	0,28
50A-3.-AE1AA		30		13	94			52			0,41
50A-4.-AC2DA	G1/2	22	32,5	13	76,5	12		50			0,27
50A-4.-AE1AA		30		13	94			52			0,40

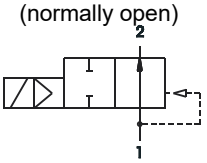
2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2

function A
(normally closed NC)



function B
(normally open)



SPECIFICATION	
General	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid, manual override
ports	G3/8 – G2
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	body brass, inner parts stainless steel and brass, sealing see type selection
mounting	installation into fixed piping system
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	G3/8 to G1 PN 20 (bar), above PN 16 (bar)
response time	depending on operating pressure and fluid
special equipment on request	stainless steel 1.4301 (AISI304) in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C)

2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2

type 51A, normally closed					
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **C2DA** ~ (50Hz)	maximum differential pressure in bar ** coil **C2DA** = (DC)	kv-value (m³/h)
51A – 3. – AC…	15	G3/8	0,5 – 16	0,5 – 12	3,0
51A – 4. – AC…	15	G1/2			3,4
51A – 5. – AC…	19	G3/4			4,8
51A – 6. – AC…	25	G1			8,5

type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **E1AA** ~ (50Hz)	maximum differential pressure in bar ** coil **E1AA** = (DC)	kv-value (m³/h)
51A – 7. – AE…	40	G 1 1/4	0,5 – 12	0,5 – 12	15
51A – 8. – AE…	40	G 1 1/2			19,5
51A – 9. – AE…	48	G 2			30,5

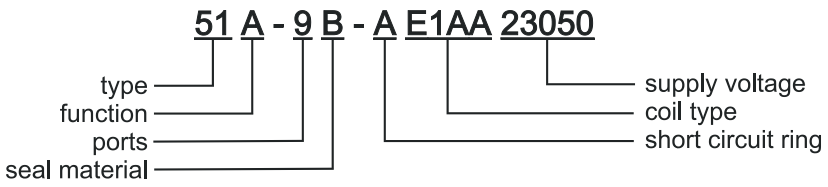
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

sealing material	**Code**	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	**Code**
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

ORDER CODE



type	type 51
function	A = normally closed, B = normally open
ports	3 = G3/8, 4 = G1/2, 5 = G3/4, 6 = G1, 7 = G1 1/4, 8 = G1 1/2, 9 = G2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring, X = without short circuit ring (on request)
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2

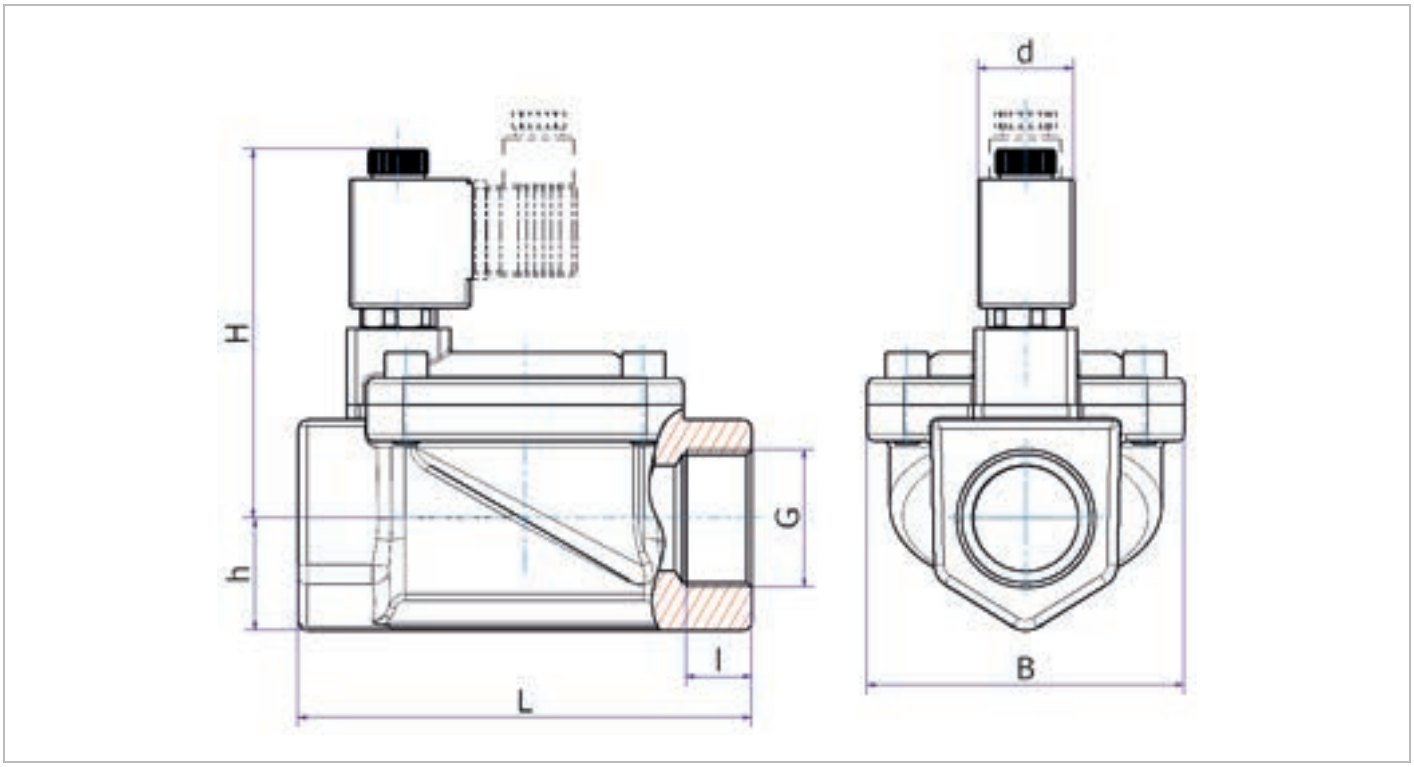
type 51B, normally open					
type * (order.-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **C2DA** ~ (50Hz)	maximum differential pressure in bar ** coil **C2DA** = (DC)	kv-value (m³/h)
51B – 3. – AC…	15	G3/8	0,5 – 10	0,5 – 10	3,0
51B – 4. – AC…	15	G1/2			3,4
51B – 5. – AC…	19	G3/4			4,8
51B – 6. – AC…	25	G1			8,5

type * (order.-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **E1AA** ~ (50Hz)	maximum differential pressure in bar ** coil **E1AA** = (DC)	kv-value (m³/h)
51B – 7. – AE…	40	G1 1/4	0,5 – 10	0,5 – 10	15
51B – 8. – AE…	40	G1 1/2			19,5
51B – 9. – AE…	48	G2			30,5

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2



dimension table for type 51A (normally closed) in mm

type	B	d C2, E1	G	h	H C2, E1	l	L	weight * (approx. kg.)
51A – 3. – AC…	48	22	G 3/8	15	76	12	65	0,52
51A – 4. – AC…			G 1/2					
51A – 5. – AC…	57,8		G 3/4	18	78,5		74,5	0,72
51A – 6. – AC…	69,8		G 1	22,1	89,6		96	1,07
51A – 7. – AE…	96	30	G 1 1/4	34,1	112	17	137,5	1,63
51A – 8. – AE…	96		G 1 1/2	34,1	112	19	137,5	2,22
51A – 9. – AE…	119		G 2	34,5	124,5	22	168	4,14

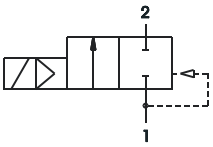
dimension table for type 51B (normally open) in mm

type	B	d C2, E1	G	h	H C2, E1	l	L	weight * (approx. kg.)
51B – 3. – AC…	48	22	G 3/8	15	77,5	12	65	0,53
51B – 4. – AC…			G 1/2					
51B – 5. – AC…	57,8		G 3/4	18	80		74,5	0,73
51B – 6. – AC…	69,8		G 1	22,1	91,1		96	1,08
51B – 7. – AE…	96	30	G 1 1/4	34,1	118	17	137,5	1,85
51B – 8. – AE…	96		G 1 1/2	34,1	118	19	137,5	2,24
51B – 9. – AE…	119		G 2	34,5	130,2	22	168	4,16

2/2 way solenoid valve normally closed

type 60A

pilot operated, DN 10mm, G3/8“, body stainless-steel AISI304



function A
(normally closed)

SPECIFICATION	
general	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC, coil 360° rotatable
operator	solenoid
ports	G3/8
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	body and tube: stainless-steel inner parts: stainless steel, sealing: see type selection
mounting	2 threads M4 on the bottom side
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-207V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don’t attack the used material
max. body housing pressure	PN 25 (bar)
response time	depending on operating pressure and fluid

2/2 way solenoid valve normally closed

type 60A

pilot operated, DN 10mm, G3/8“, body stainless-steel AISI304

type 60A, normally closed					
type * (order-nr.)	DN (mm)	ports	maximum differential pressure in bar ** coil **E1AA** ~ (50Hz)	= (DC)	kv-value (m^3/h)
60A - 3. - A….	10	G3/8	0,02 – 12	0,02 – 10	1,7

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. Valves are suitable for vacuum.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

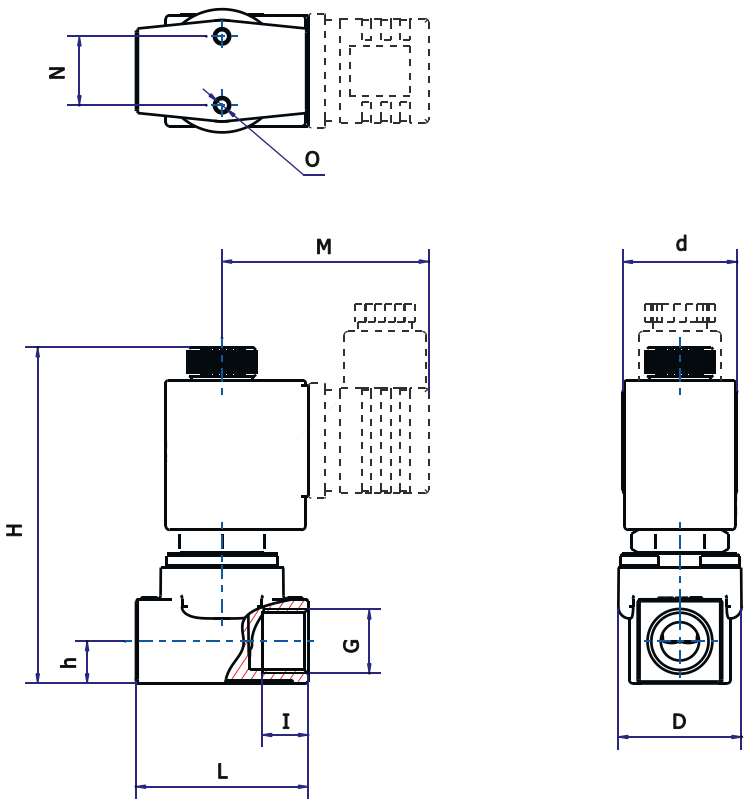
coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

ORDER CODE	60 A - 3 B - A E1AA 02400 type function ports seal material supply voltage coile type short circuit ring
type	type 60
function	A = normally closed
ports	3 = G3/8
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed

type 60A

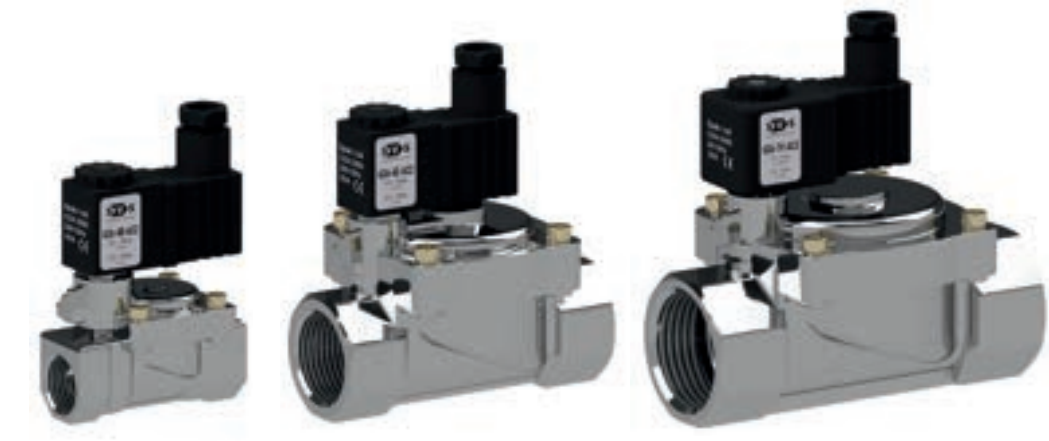
pilot operated, DN 10mm, G3/8“, body stainless-steel AISI304



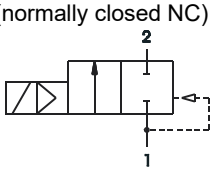
Dimension tale for type 60A in mm, weight approx. in kg											
type	G	d	D	h	H	I	L	M	N	O	weight (kg)
60A-3.-AE1AA	G3/8	30	32,5	11	88	12	45	54	18	M4	0,36

2/2 way solenoid valve normally closed or normally open

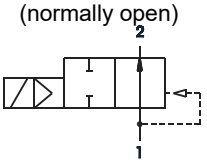
type 62, body stainless steel 1.4301 (AISI304)
pilot operated, DN 13-50mm, G1/2 – G2



function A
(normally closed NC)



function B
(normally open)



SPECIFICATION	
General	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/2 – G2
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	body and inner parts stainless steel 1.4301 (AISI 304), 1.4305 (AISI 303) and 1.4105IL (AISI 430 FR), sealing see type selection
mounting	installation into fixed piping system
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	G1/2 to G1 PN 20 (bar), above PN 16 (bar)
response time	depending on operating pressure and fluid
certificate	
special equipment on request	coil type with cable, coils for temperature class H (180°C), manual override

2/2 way solenoid valve normally closed or normally open

type 62, body stainless steel 1.4301 (AISI304)
pilot operated, DN 13-50mm, G1/2 – G2

type 62A, normally closed									
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **						kv-value (m^3/h)
			coil **C2DA**		coil **C3AA**		coil **CWMA** ***		
			~ (AC)	= (DC)	~ (AC)	= (DC)	~ (AC)	= (DC)	
62A – 4. – AC…	13	G1/2	0,3 – 16	0,3 – 10	0,3 - 16	0,3 – 16	0,3 – 10	0,3 – 8	3,4
62A – 5. – AC…	19	G3/4							4,8
62A – 6. – AC…	24	G1							8,5
62A – 7. – AC…	30	G 1 1/4	0,3 – 12	0,3 – 8	0,3 - 12	0,3 - 12	0,3 – 8	0,3 – 6	15
62A – 8. – AC…	38	G 1 1/2							19,5
62A – 9. – AC…	48	G 2							30,5

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** Ex-coils may be used up to 80°C fluid temperature only. Higher pressure with Ex-coils are possible on request.
*** direct-current-coil CWMA conforms to temperature class T4(T130°C), alternating-current-coil conforms to temperature class T5(T95°C) by dust atmosphere
Cable cross section up to 1mm²

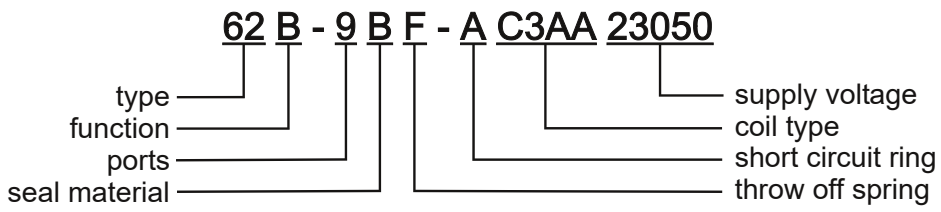
sealing material	**Code**	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	**Code**
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C3AA	17	13	6,3	IP65 / IP00	DIN EN 175301-803 A
CWMA *	3,2 class T5	3,2 class T5	3,8 class T4	IP66	Ex db mb IIC T4 Gb EX tb IIIC Tx°C Db IP66 Db*** coil with cable terminal box

* direct-current-coil CWMA conforms to temperature class T4(T130°C), alternating-current-coil conforms to temperature class T5(T95°C) by dust atmosphere
Cable cross section up to 1mm²

ORDER CODE



type	type 62
function	A = normally closed, B = normally open
ports	4 = G1/2, 5 = G3/4, 6 = G1, 7 = G1 1/4, 8 = G1 1/2, 9 = G2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
throw off spring	only by type 62B,
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

for type 62A a bistable manual override is optional available. If needed please write into plaintext.

2/2 way solenoid valve normally closed or normally open

type 62, body stainless steel 1.4301 (AISI304)
pilot operated, DN 13-50mm, G1/2 – G2

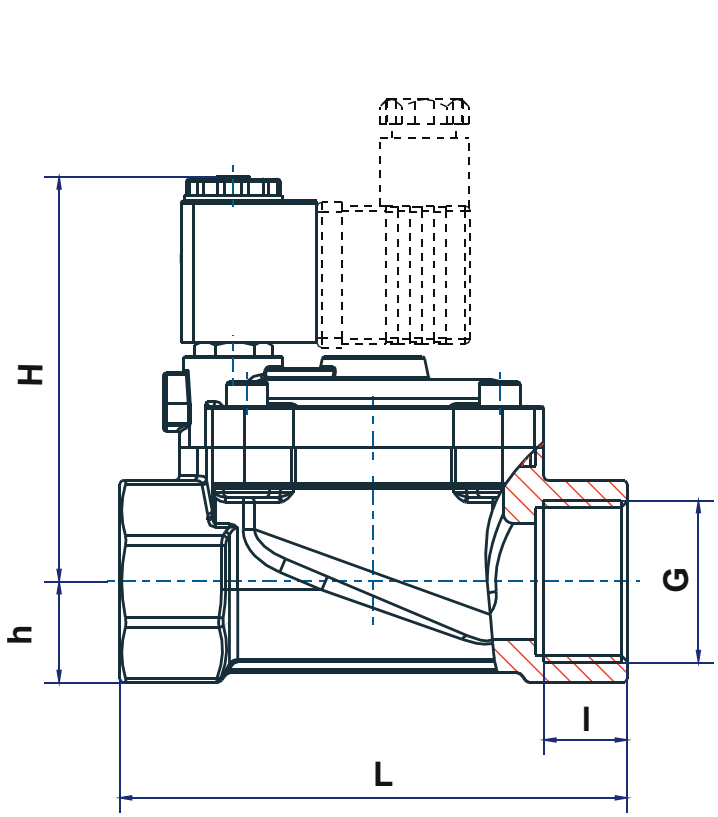
type 62B, normally open					
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **C2DA** AC and DC	maximum differential pressure in bar ** coil **CWMA** *** AC and DC	kv-value (m^3/h)
62B – 4.C – AC…	13	G1/2	0,3 – 8	0,3 – 8	3,4
62B – 5.C – AC…	19	G3/4			4,8
62B – 6.C – AC…	24	G1			8,5
62B – 7.C – AC…	30	G 1 1/4	0,3 – 5	0,3 – 5	15
62B – 8.C – AC…	38	G 1 1/2			19,5
62B – 9.C – AC…	48	G 2			30,5

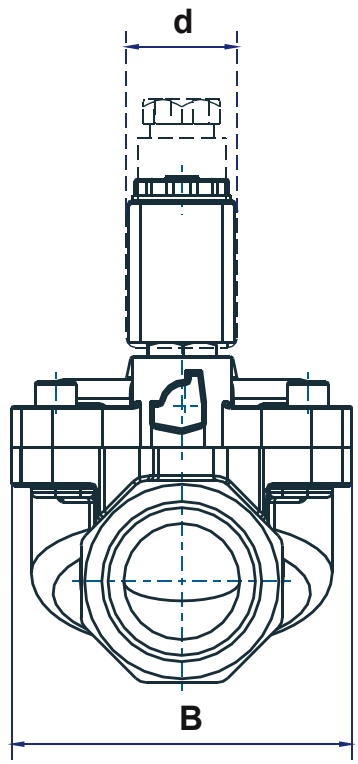
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar ** coil **C3AA** AC and DC		kv-value (m^3/h)
62B – 4.F – AC…	13	G1/2	0,3 – 16		3,4
62B – 5.F – AC…	19	G3/4			4,8
62B – 6.F – AC…	24	G1			8,5
62B – 7.F – AC…	30	G 1 1/4	0,3 – 8		15
62B – 8.F – AC…	38	G 1 1/2			19,5
62B – 9.F – AC…	48	G 2			30,5

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** Ex-coils may be used up to 80°C fluid temperature only. Higher pressure with Ex-coils are possible on request.
*** direct-current-coil CWMA conforms to temperature class T4(T130°C), alternating-current-coil conforms to temperature class T5(T95°C) by dust atmosphere
Cable cross section up to 1mm²

2/2 way solenoid valve normally closed or normally open

type 62, body stainless steel 1.4301 (AISI304)
pilot operated, DN 13-50mm, G1/2 – G2





dimension table for type 62 in mm

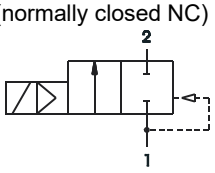
Typ	B	d			G	h	H	l	L	weight * (approx. kg.)
		C2	C3	CW						
62. – 4. – AC…	42	22	30	36	G 1/2	10	78	14	66	0,4
62. – 5. – AC…	51				G 3/4	13	81	16	79	0,55
62. – 6. – AC…	71				G 1	16	90	17	105	1,11
62. – 7. – AC…	85				G 1 1/4	20	96	20	130	1,58
62. – 8. – AC…	96				G 1 1/2	23	106	20	146	2,22
62. – 9. – AC…	125				G 2	30	114	23	174	3,75

* Weight value refers to coil C2DA
Additional weight for C3AA = 0,06kg, for CWMA = 0,11kg

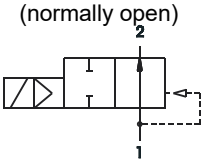
2/2 way solenoid valve normally closed or normally open

type 63, stainless steel body AISI 304, piston valve,
pilot operated, DN 15-50mm, G1/2 – G2, max. 100bar

function A
(normally closed NC)



function B
(normally open)



SPECIFICATION	
General	
type of construction	2/2-poppet valve, with piston, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/2 – G1, (G1 ¼ - G2 in preparation)
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	-10 °C to +130°C
viscosity	max. 21mm²/s (cst) or 3°E
material	body and inner parts stainless steel 1.4301 AISI 304, sealing PTFE
mounting	installation into fixed piping system
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-207V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	coil E1 class F (155°C) winding class H (180°C), coil E3 class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
fluid	all liquids and gases, which don't attack the used material
max. body housing pressure	G1/2 to G1 PN 100 (bar), above PN 80 (bar)
response time	depending on operating pressure and fluid
special equipment on request	coil with other connection type, coil explosion proof according to ATEX

2/2 way solenoid valve normally closed or normally open

type 63, stainless steel body AISI 304, piston valve,
pilot operated, DN 15-50mm, G1/2 – G2, max. 100bar

type 63A, normally closed					
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar		kv-value (m³/h)
			coil **E1AA**	coil **E3AE**	
			~ (50Hz) = (DC)	~ (50Hz) = (DC)	
63A – 4T – AE…	15	G1/2	2-40	2-100	3,6
63A – 5T – AE…	20	G3/4			5,5
63A – 6T – AE…	25	G1			8,5
63A – 7T – AE…	32	G1 ¼	2-40	2-80	15
63A – 8T – AE…	40	G1 ½			19,5
63A – 9T – AE…	50	G2			33

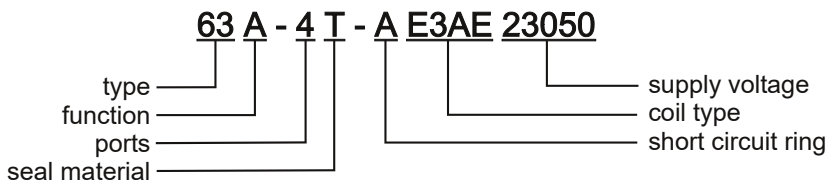
type 63B, normally open					
type * (order.-nr.)	NW DN (mm)	ports	maximum differential pressure in bar		kv-value (m³/h)
			coil **E1AA**	coil **E3AE**	
			~ (50Hz) = (DC)	~ (50Hz) = (DC)	
63B – 4T – AE…	15	G1/2	-	2-65	3,6
63B – 5T – AE…	20	G3/4			5,5
63B – 6T – AE…	25	G1			8,5
63B – 7T – AE…	32	G1 ¼	-	2-40	15
63B – 8T – AE…	40	G1 ½			19,5
63B – 9T – AE…	50	G2			33

* Type designation (order-nr.) must be completed with coil and supply voltage.

standard voltage	**code**	special voltage
24V = DC	**02400**	12V DC, 110V DC, 207V DC 42V 50-60Hz, 48V 50-60Hz, 110V 50-60Hz
24V ~ (50Hz)	**02450**	
230V ~ (50Hz)	**23050**	

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E3AE	70	32	27	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A

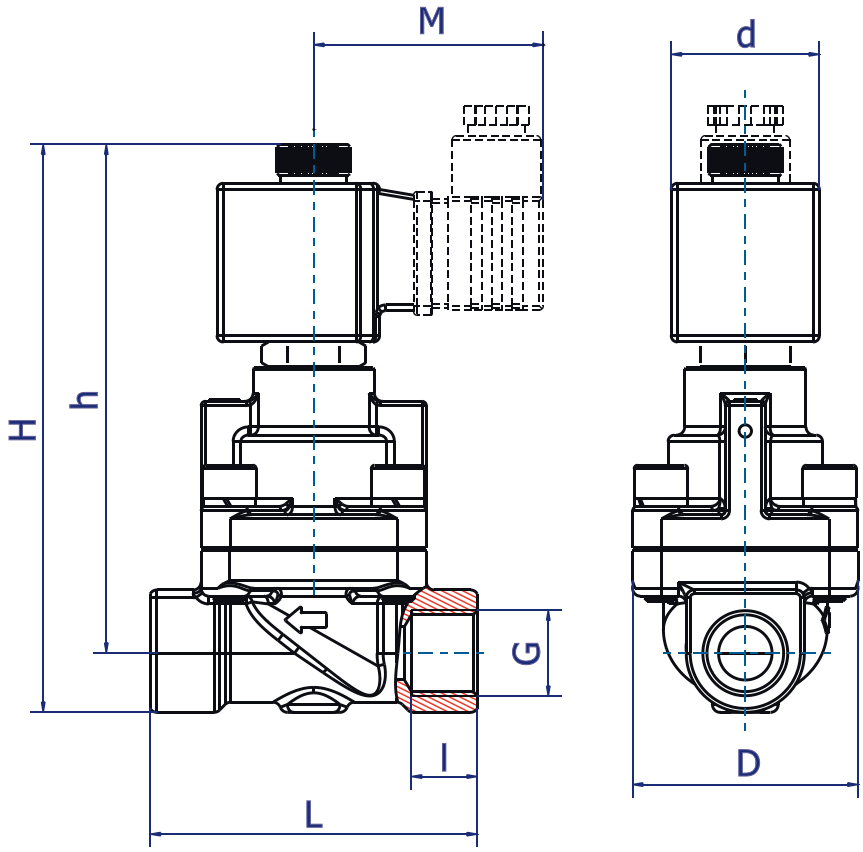
ORDER CODE



type	type 63
function	A = normally closed, B = normally open
ports	4 = G1/2, 5 = G3/4, 6 = G1, 7 = G1 1/4, 8 = G1 1/2, 9 = G2
seal material	T = PTFE
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 63, stainless steel body AISI 304, piston valve,
pilot operated, DN 15-50mm, G1/2 – G2, max. 100bar



dimension table for type 63A (normally closed) in mm

type	M		d		D	G	h	H	l	L	weight (approx. kg.)
	E1AA	E3AE	E1AA	E3AE							
63A – 4T – AE…	52,5	54	30	36	55	G 1/2	124	138	16	80	1,17
63A – 5T – AE…					60	G 3/4	132	150		90	1,53
63A – 6T – AE…					68	G 1	137	158		100	1,97
63A – 7T – AE…					80	G 1 1/4	143	169		130	2,8
63A – 8T – AE…					90	G 1 1/2	153	183	20	130	3,5
63A – 9T – AE…					108	G 2	163	198	22	149	5,2

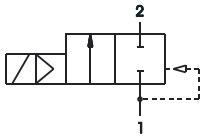
dimension table for type 63B (normally open) in mm

Typ	M		d		D	G	h	H	l	L	weight (approx. kg.)
	E1AA	E3AE	E1AA	E3AE							
63B – 4T – AE…	52,5	54	30	36	55	G 1/2	130	144	16	80	1,19
63B – 5T – AE…					60	G 3/4	138	156		90	1,55
63B – 6T – AE…					68	G 1	143	165		100	1,99
63B – 7T – AE…					80	G 1 1/4	149	175		130	2,8
63B – 8T – AE…					90	G 1 1/2	159	189	20	130	3,5
63B – 9T – AE…					108	G 2	169	204	22	149	5,2

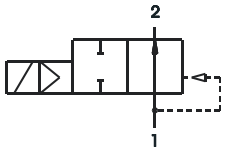
2/2 way solenoid valve normally closed or normally open

type 70, body brass
force pilot operated, DN 16-50mm, G 3/8 – G 2

function A
(normally closed)



function B
(normally open)



SPECIFICATION	
general	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G 3/8 – G 2
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	body brass, inner parts stainless steel and brass, sealing see type selection
mounting	installation into fixed piping system
installation	only with vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 16 (bar)
response time	depending on operating pressure and fluid
special equipment on request	coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C)

2/2 way solenoid valve normally closed or normally open

type 70, body brass
force pilot operated, DN 16-50mm, G 3/8 – G 2

type 70A, normally closed							
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				
			coil **E1AA**	coil **E3AE**		coil **F1AA**	kv-value (m³/h)
			~ (50Hz)	~ (50Hz)	= (DC)	= (DC)	
70A-3.-A….	16	G3/8	0 – 10	0 – 14	0 – 7	0 – 14	3,5
70A-4.-A….	16	G1/2					3,8
70A-5.-A….	20	G3/4					4,7
70A-6.-A….	25	G1					8,0

type* (order-nr.)	NW DN (MM)	ports	maximum differential pressure in bar **				
			coil **F1AA**		coil **G1AA**		kv-value (m³/h)
			~ (50Hz)	= (DC)	= (DC)	~ (50Hz)	
70A-7.-A….	32	G1 1/4	0 – 12	0 – 3	0 – 9	0 – 10	13,0
70A-8.-A….	40	G1 1/2	0 – 10	0 – 2,5	0 – 7		16,8
70A-9.-A….	50	G2		0 – 1,5	0 – 5	0 – 10	30,2

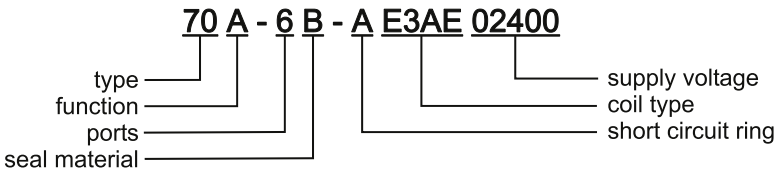
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage (see order code).
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	EN 175301-803, type A (DIN 43650-A)
E3AE	70	32	27		
F1AA	70	35	27		
G1AA	80	40	32		

ORDER CODE



type	type 70
function	A = normally closed, B = normally open
ports	3 = G 3/8, 4 = G 1/2, 5 = G 3/4, 6 = G 1, 7 = G 1 1/4, 8 = G 1 ½, 9 = G 2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 70, body brass
force pilot operated, DN 16-50mm, G 3/8 – G 2

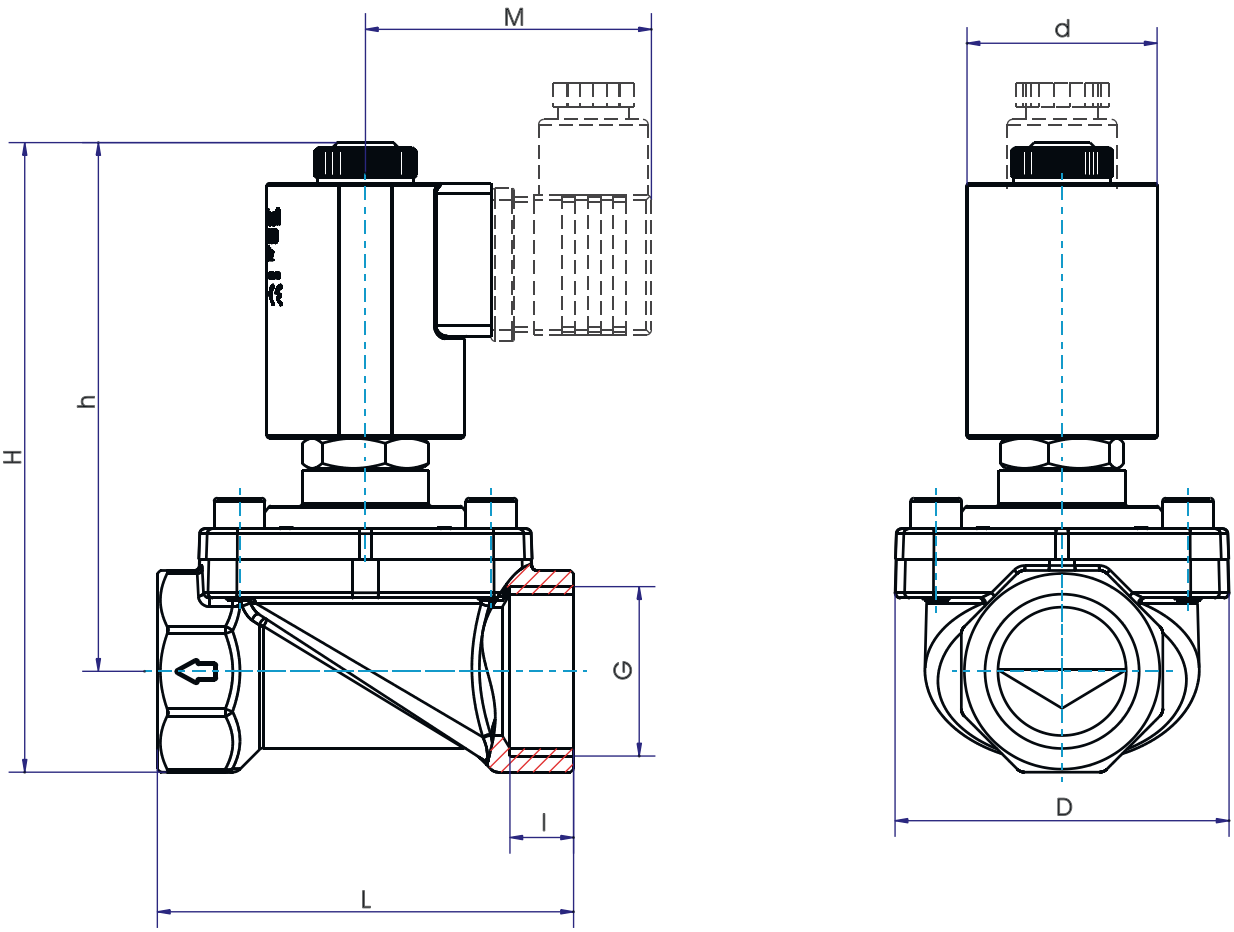
type 70B, normally open							
type * (order-nr.)	NW DN (mm)	connection	maximum differential pressure in bar **				kv-value (m^3/h)
			coil **E3AE**		coil **F1AA**		
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
70B-3.-A....	16	G 3/8	0 – 14	0 – 14	-	-	3,5
70B-4.-A....	16	G 1/2					3,8
70B-5.-A....	20	G 3/4					4,7
70B-6.-A....	25	G 1	0 – 7	0 – 7	0 – 14	0 - 14	8,0

type* (order-nr.)	NW DN (MM)	connection	maximum differential pressure in bar **			kv-value (m^3/h)
			coil **F1AA**			
			~ (50Hz)	= (DC)		
70B-7.-A....	32	G 1 1/4	0 – 10	0 – 10		13
70B-8.-A....	40	G 1 1/2				16,8
70B-9.-A....	50	G 2				30,2

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage (see order code).

2/2 way solenoid valve normally closed or normally open

type 70, body brass
force pilot operated, DN 16-50mm, G 3/8 – G 2

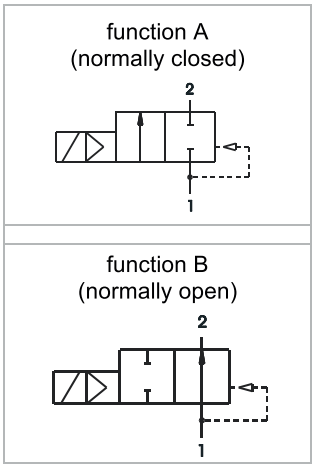


Dimension table for type 70 in mm, weight approx. kg

G	coil	type 70A-		type 70B-		M	d	L	l	D	weight approx. kg	
		H	h	H	h						70A-	70B-
G 3/8	E1	101	87.5	118	105	52.5	30	60	12	45	0,53	0,62
	E3					54	36				0,61	0,70
	F1	111	98	130	117	55	39				0,68	0,80
G 1/2	E1	101	87.5	118	105	52.5	30				0,50	0,59
	E3					54	36				0,58	0,67
	F1	111	98	130	117	55	39				0,65	0,77
G 3/4	E1	106	90	123.5	107.5	52.5	30	62	11	50	0,56	0,65
	E3					54	36				0,64	0,73
	F1	117	100.5	136	119.5	55	39				0,71	0,83
G1	E1	115	95	132	112	52.5	30	82		65	0,83	0,92
	E3					54	36				0,91	1,00
	F1	125	105	144	124.5	55	39				0,98	1,10
G1 1/4	F1	137	111.5	155.5	131			102	18	82	1,52	1,64
	G1	149	124	169.5	144.5	61	46				1,75	1,84
G1 1/2	F1	142.5	114.5	161.5	133.5	55	39	110	22	85	1,74	1,86
	G1	155	127	175.5	147.5	61	46				1,97	2,06
G2	F1	157	123	176	142	55	39	133.5		107	2,77	2,89
	G1	169	135	190	156	61	46				3,00	3,09

2/2 way solenoid valve normally closed or normally open

type 76, stainless steel body AISI 304
force pilot operated, DN 16-50mm, G 1/2 – G 2



SPECIFICATION	
general	
type of construction	2/2-poppet valve, with diaphragm, normally closed NC or normally open, coil 360° rotatable
operator	solenoid
ports	G 1/2 – G 2
ambient temperature	-20 °C to +50 °C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) or 3°E
material	Bod and inner parts stainless steel 1.4301 (AISI 304) or 1.4305 (AISI 303), sealing see type selection
mounting	installation into fixed piping system
installation	only with vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C), coil E3 temperature class H
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 16 (bar)
response time	depending on operating pressure and fluid
special equipment on request	coil type with cable, coils for temperature class H (180°C)

2/2 way solenoid valve normally closed or normally open

type 76, stainless steel body AISI 304
force pilot operated, DN 16-50mm, G 1/2 – G 2

type 76A, normally closed							
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				
			coil **E1AA**	coil **E3AE**		coil **F1AA**	kv-value (m³/h)
			~ (50Hz)	~ (50Hz)	= (DC)	= (DC)	
76A-4.-.....	16	G1/2	0 – 10	0 – 14	0 – 7	0 – 14	3,8
76A-5.-.....	20	G3/4					4,7
76A-6.-.....	25	G1					8,0

type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				
			coil **F1AA**		coil **G1AA**		kv-value (m³/h)
			~ (50Hz)	= (DC)	= (DC)	~ (50Hz)	
76A-7.-.....	32	G1 1/4	0 – 12	0 – 3	0 – 9	0 – 10	13
76A-8.-.....	40	G1 1/2	0 – 10	0 – 2,5	0 – 7		16,8
76A-9.-.....	50	G2		0 – 1,5	0 – 5	0 – 10	30,2

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage (see order code).
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C.

sealing material	**Code**	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80°C	neutral gases and liquids
EPDM	**E**	max. 130°C	hot water, steam, not for oil and grease
FPM	**V**	max. 130°C	oil, petrol, oxygen

standard voltage	**Code**
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	EN 175301-803, type A (DIN 43650-A)
E3AE	70	32	27		
F1AA	70	35	27		
G1AA	80	40	32		

ORDER CODE	76 A - 6 B - A E3AE 02400 tyoe function ports seal material supply voltage coil type short circuit ring
type	type 76
function	A = normally closed, B = normally open
ports	4 = G 1/2, 5 = G 3/4, 6 = G 1, 7 = G1 1/4, 8 = G1 1/2, 9 = G2
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

2/2 way solenoid valve normally closed or normally open

type 76, stainless steel body AISI 304
force pilot operated, DN 16-50mm, G 1/2 – G 2

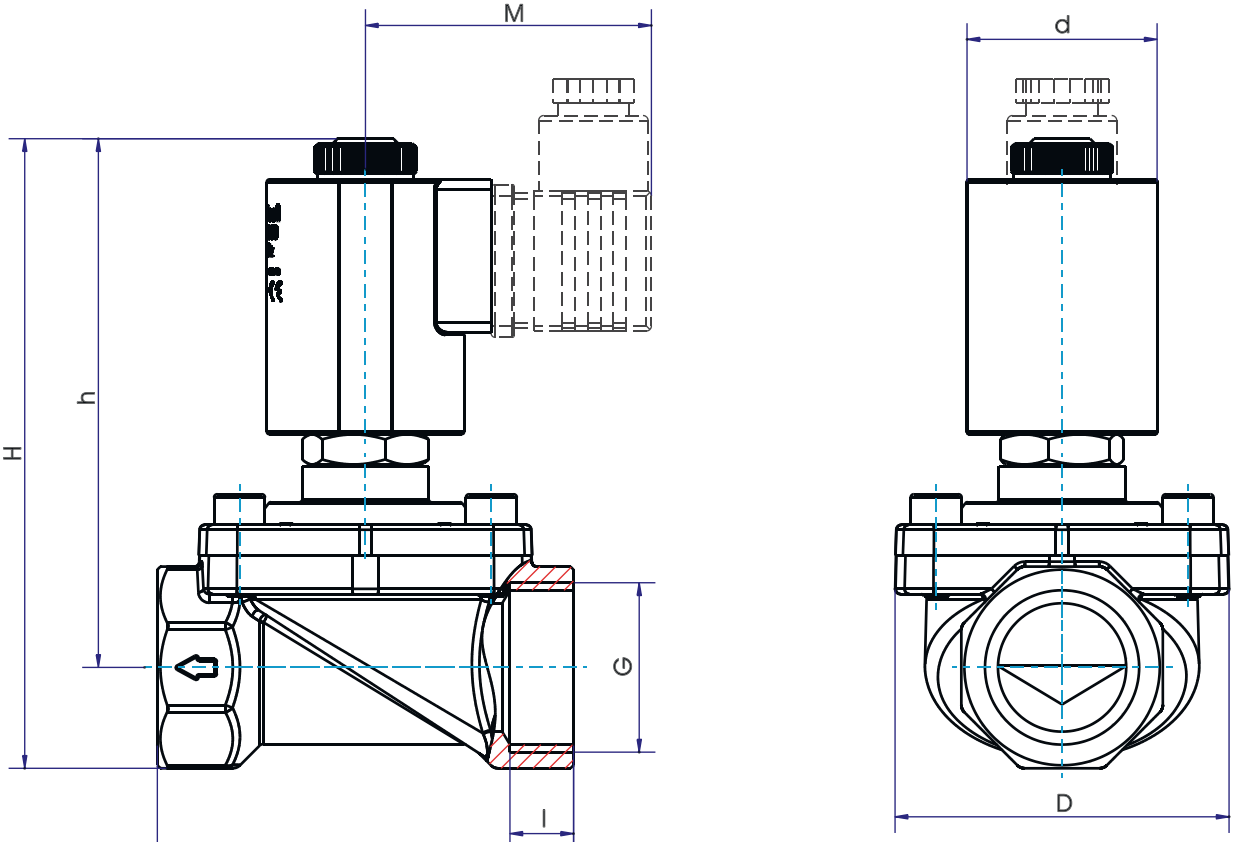
type 76B, normally open							
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **				
			coil **E3AE**		coil **F1AA**		kv-value (m^3/h)
			~ (50Hz)	= (DC)	~ (50Hz)	= (DC)	
76B-4.-.....	16	G 1/2	0 – 14	0 – 14			3,8
76B-5.-.....	20	G 3/4					4,7
76B-6.-.....	25	G 1	0 – 7	0 – 7	0 – 14	0 – 14	8,0

type * (order-nr.)	NW DN (MM)	ports	maximum differential pressure in bar **			
			coil **F1AA**			kv-value (m^3/h)
			~ (50Hz)	= (DC)		
76B-7.-.....	32	G 1 1/4	0 – 10	0 – 10		13
76B-8.-.....	40	G 1 1/2				16,8
76B-9.-.....	50	G 2				30,2

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage (see order code).

2/2 way solenoid valve normally closed or normally open

type 76, stainless steel body AISI 304
force pilot operated, DN 16-50mm, G 1/2 – G 2



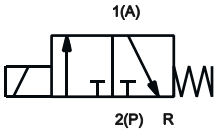
Dimension table for type 76 in mm, weight approx. kg

G	coil	type 76A-		type 76B-		M	d	L	l	D	weight approx. kg	
		H	h	H	h						76A-	76B-
G 1/2	E1	101	87.5	118	105	52.5	30	60	12	45	0,45	0,54
	E3					54	36				0,52	0,61
	F1	111	98	130	117	55	39				0,60	0,72
G 3/4	E1	106	90	123.5	107.5	52.5	30	67	11	50	0,55	0,64
	E3					54	36				0,62	0,71
	F1	117	100.5	136	119.5	55	39				0,70	0,82
G1	E1	115	95	132	112	52.5	30	84		65	0,80	0,89
	E3					54	36				0,87	0,96
	F1	125	105	144	124.5	55	39				0,95	1,07
G1 1/4	F1	137	111.5	155.5	131			105	18	82	1,37	1,49
	G1	149	124	169.5	144.5	61	46				1,61	1,69
G1 1/2	F1	142.5	114.5	161.5	133.5	55	39	110	22	85	1,51	1,63
	G1	155	127	175.5	147.5	61	46				1,75	1,83
G2	F1	157	123	176	142	55	39	133.5		108	2,33	2,45
	G1	169	135	190	156	61	46				2,57	2,65

3/2 way solenoid valve normally closed or normally open

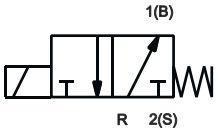
type 82, body brass
direct operated, DN 1,2 – 2,5mm, G 1/8

operating mode C



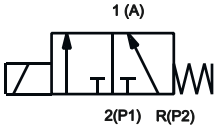
normally closed

operating mode D



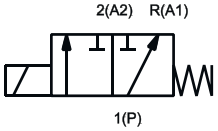
normally open

operating mode E



mixer function

operating mode F



distribution function

SPECIFICATION	
general	
type of construction	3/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G 1/8, tube with M5 female thread
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) bzw 3°E
material	body and tube: brass inner parts : stainless steel sealing: see type selection
mounting	2 threads M4 or fixing holes diameter 3,2mm
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	12 – 20ms
special equipment on request	stainless steel 1.4305 (AISI303) in place of brass, coil type with cable, bright nickel-plated or chemical, nickel-plated, explotionproof coil, coils for temperature class H (180°C), other sealing materials, manual override

3/2 way solenoid valve normally closed or normally open

type 82, body brass
direct operated, DN 1,2 – 2,5mm, G 1/8

type 82C, 3/2 way solenoid valve normally closed, pressure port at 2 (P)					
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
		fluid compressed air	fluid water		
82C-1.1212CA-AC1DA…..	1,2	0 – 9	0 – 7	0,045	0,040
82C-1.1515BA-AC1DA…..	1,5	0 – 3	0 – 2,5	0,082	0,060
82C-1.2018BA-AC1DA…..	2,0	0 – 2	0 – 1,5	0,133	0,071
82C-1.2518BA-AC1DA…..	2,5	0 – 1	0 – 1	0,195	0,071
82C-1.1212FA-AC2DA…..	1,2	0 – 12	0 – 11	0,045	0,040
82C-1.1515FA-AC2DA…..	1,5	0 – 8	0 – 7	0,082	0,060
82C-1.2018DA-AC2DA…..	2,0	0 – 4,5	0 – 4	0,133	0,071
82C-1.2518DA-AC2DA…..	2,5	0 – 2,5	0 – 2,5	0,195	0,071
82C-1.1212GA-AC3AA…..	1,2	0 – 15	0 – 14	0,045	0,040
82C-1.1515GA-AC3AA…..	1,5	0 – 10	0 – 8	0,082	0,060
82C-1.2018FA-AC3AA…..	2,0	0 – 6	0 – 5,5	0,133	0,071
82C-1.2518EA-AC3AA…..	2,5	0 – 3,5	0 – 3,0	0,195	0,071

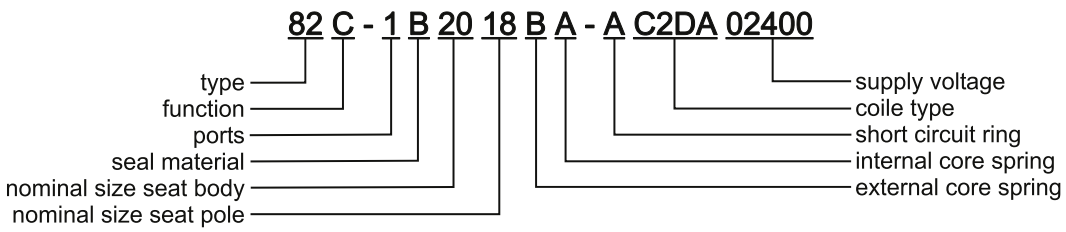
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 21 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 130 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C1DA	9	5	3,0	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C3AA	17	13	6,3	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

ORDER CODE



type	type 82
function	C = normally closed, D = normally open, E = mixer function, F= distribution function
ports	1 = G1/8 (body)
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat body	12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm
nominal size seat pole	12 = 1,2 mm, 15 = 1,5 mm, 18 = 1,8 mm
external core spring	Depends to the valve type, see specifications of the particular type
internal core spring	A = 3/2 NC, B = 3/2 NO
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

3/2 way solenoid valve normally closed or normally open

type 82, body brass
direct operated, DN 1,2 – 2,5mm, G 1/8

type 82D, 3/2 way solenoid valve normally open, pressure port at 3 (R)					
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
		~ (50Hz)	=(DC)		
82D-1.1212AB-AC1DA…..	1,2	0 – 2,8	0 – 1,8	0,045	0,040
82D-1.1515AB-AC1DA…..	1,5	0 – 1,8	0 – 0,6	0,082	0,060
82D-1.2018AB-AC1DA…..	1,8	0 – 1,2	0 – 0,5	0,133	0,071
82D-1.1212AC-AC2DA…..	1,2	0 – 3,8	0 – 3	0,045	0,040
82D-1.1515AC-AC2DA…..	1,5	0 – 2,5	0 – 1,5	0,082	0,060
82D-1.2018AC-AC2DA…..	1,8	0 – 1,7	0 – 1,3	0,133	0,071
82D-1.1212AD-AC3AA…..	1,2	0 – 5,8	0 – 4	0,045	0,040
82D-1.1515AD-AC3AA…..	1,5	0 – 4	0 – 2	0,082	0,060
82D-1.2018AD-AC3AA…..	1,8	0 – 2,5	0 – 1,8	0,133	0,071

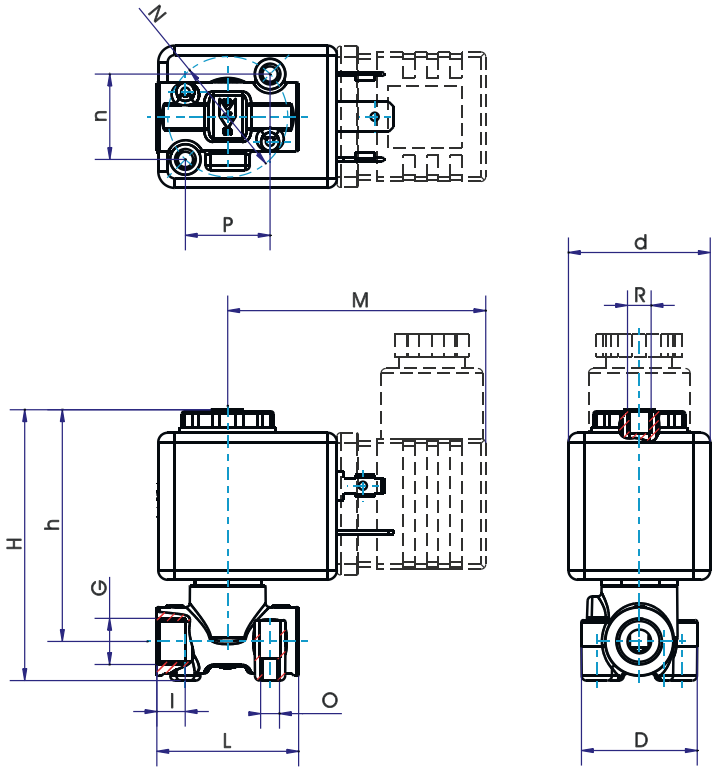
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 21 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

type 82E, 3/2 way solenoid valve with mixer function
technical data on request according to the input pressures at 2 and R.

type 82F, 3/2 way solenoid valve with distribution function
technical data on request according to the pressure level at 1,2 und R.

3/2 way solenoid valve normally closed or normally open

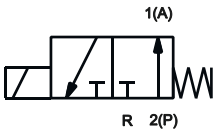
type 82, body brass
direct operated, DN 1,2 – 2,5mm, G 1/8



dimension table for type 82 in mm, weight approx. in g														
with coil	P	N	n	M	h	H	G	O	I	L	R	D	d	weight (g)
C1DA	18	25	18	49	49	58	G 1/8	M4	6	30	M5	24.5	22	110
C2DA														110
C3AA				55									30	165

3/2 way solenoid valve normally open

type 82S, body brass, pressure release by guide tube
direct operated, DN 1,2 – 1,5mm, G1/8



operating mode S

SPECIFICATION	
General	
type of construction	3/2-poppet valve, normally open NO, coil 360° rotatable
operator	solenoid
ports	G 1/8, tube with M5 female thread
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) bzw 3°E
material	Body and tube: brass Inner parts : stainless steel, brass sealing: see type selection
mounting	2 threads M4 or fixing holes diameter 3,2mm
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	12 – 20ms
special equipment on request	stainless steel 1.4305 (AISI303) in place of brass, coil type with cable, bright nickel-plated or chemical, nickel-plated, explosionproof coil, coils for temperature class H (180°C), other sealing materials

3/2 way solenoid valve normally open

type 82S, body brass, pressure release by guide tube
direct operated, DN 1,2 – 1,5mm, G1/8

type 82S, 3/2 way solenoid valve normally open, pressure release by guide tube					
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
		fluid compressed air	fluid water		
82S-1.1212AY-AC1DA…..	1,2	0 – 7,5	0 – 6	0,045	0,040
82S-1.1512AY-AC1DA…..	1,5	0 – 6	0 – 5	0,060	0,040

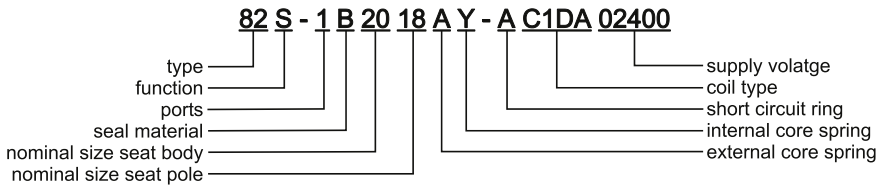
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 21 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 130 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C1DA	9	5	3,0	IP65 / IP00	Connector (DIN 43650) type B industrial standard

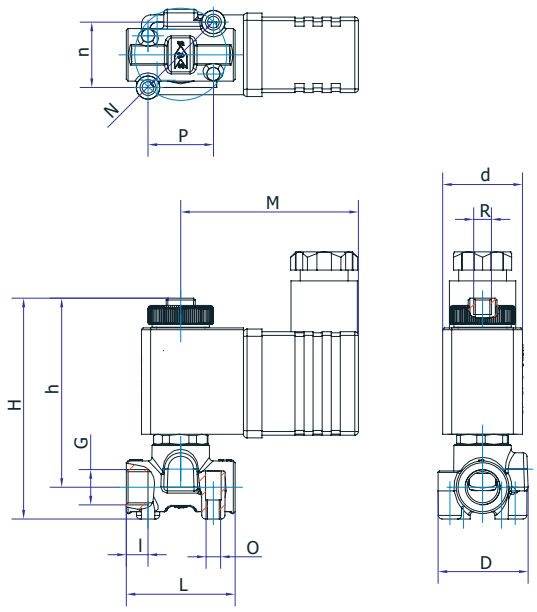
ORDER CODE



type	type 82
function	S = normally open, pressure release by guide tube
ports	1 = G1/8 (body)
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat body	12 = 1,2 mm, 15 = 1,5 mm
nominal size seat pole	12 = 1,2 mm
external core spring	A = 1,0 N
internal core spring	Y = 2,4 NS
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

3/2 way solenoid valve normally open

type 82S, body brass, pressure release by guide tube
direct operated, DN 1,2 – 1,5mm, G1/8

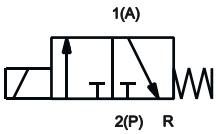


dimension table for type 82S in mm, weight approx. in g														
with coil	N	n	P	M	H	h	G	I	L	O	R	D	d	weight (g)
C1DA	25.4	18	18	49	61	52.1	G1/8	6	30	M4	M5	24.5	22	110

3/2 way solenoid valve normally closed or normally open

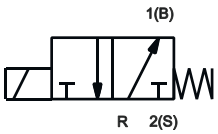
type 84, body brass
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

operating mode C



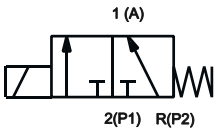
normally closed

operating mode D



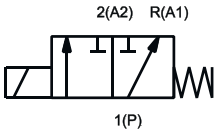
normally open

operating mode E



mixer function

operating mode F



distribution function

SPECIFICATION	
general	
type of construction	3/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/8, G1/4, tube with G1/8 female thread
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) bzw 3°E
material	body and tube: brass inner parts and nozzle : stainless steel 1.4305 (AISI 303) and 1.4105IL (AISI 430FR) sealing: see type selection
mounting	2 threads M4
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-207V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
response time	12 – 20ms
special equipment on request	stainless steel 1.4305 (AISI303) in place of brass, coil type with cable, bright nickel-plated or chemical, nickel-plated, explotionproof coil, coils for temperature class H (180°C), other sealing materials, manual override

3/2 way solenoid valve normally closed or normally open

type 84, body brass
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

type 84C, 3/2 way solenoid valve normally closed, pressure port at 2 (P), spring set E (13N)					
type * (order-nr.)	ports	NW DN (mm)	maximum differential pressure in bar **	kv-value body nozzle (m³/h)	kv-value pole nozzle (m³/h)
84C-1.1515EA-A E1AA	G1/8	1,5	0 – 18	0,08	0,07
84C-2.1515EA-A E1AA	G1/4				
84C-1.2020EA-A E1AA	G1/8	2,0	0 – 13	0,13	0,12
84C-2.2020EA-A E1AA	G1/4				
84C-1.2525EA-A E1AA	G1/8	2,5	0 – 8	0,19	0,18
84C-2.2525EA-A E1AA	G1/4				
84C-1.3030EA-A E1AA	G1/8	3,0	0 – 6	0,25	0,23
84C-2.3030EA-A E1AA	G1/4				
84C-1.3530EA-A E1AA	G1/8	3,5	0 – 3,5	0,30	0,23
84C-2.3530EA-A E1AA	G1/4				
84C-1.4030EA-A E1AA	G1/8	4,0	0 – 2,5	0,37	0,23
84C-2.4030EA-A E1AA	G1/4				

type 84C, 3/2 way solenoid valve normally closed, pressure port at 2 (P), spring set F (22N)					
type * (order-nr.)	ports	NW DN (mm)	maximum differential pressure in bar **	kv-value body nozzle (m³/h)	kv-value pole nozzle (m³/h)
84C-1.1515FA-A E3AE	G1/8	1,5	0 – 30	0,08	0,07
84C-2.1515FA-A E3AE	G1/4				
84C-1.2020FA-A E3AE	G1/8	2,0	0 – 23	0,13	0,12
84C-2.2020FA-A E3AE	G1/4				
84C-1.2525FA-A E3AE	G1/8	2,5	0 – 18	0,19	0,18
84C-2.2525FA-A E3AE	G1/4				
84C-1.3030FA-A E3AE	G1/8	3,0	0 – 14	0,25	0,23
84C-2.3030FA-A E3AE	G1/4				
84C-1.3530FA-A E3AE	G1/8	3,5	0 – 10	0,30	0,23
84C-2.3530FA-A E3AE	G1/4				
84C-1.4030FA-A E3AE	G1/8	4,0	0 – 8	0,37	0,23
84C-2.4030FA-A E3AE	G1/4				

* Type designation (order-nr.) must be completeld with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

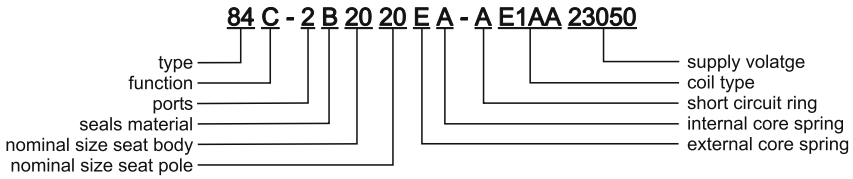
sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 120 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A
E3AE	70	32	27	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

3/2 way solenoid valve normally closed or normally open

type 84, body brass
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

ORDER CODE	
type	type 84
function	C = normally closed, D = normally open, E = mixer function, F= distribution function
ports	1 = G1/8, 2 = G1/4
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat body	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm, 35 = 3,5mm, 40 = 4,0 mm
nominal size seat pole	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm,
external core spring	A = normally open, E = normally closed (spring set 13N), F = normally closed (spring set 22N)
internal core spring	A = normally closed, B = normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

type 84D, 3/2 way solenoid valve normally open, pressure port at 3 (R)

type * (order-nr.)	threaded connection	NW DN body nozzle (mm)	NW DN pole nozzle (mm)	maximum differential pressure in bar **		kv-value body nozzle (m³/h)	kv-value pole nozzle (m³/h)
				fluid compressed air	fluid water		
84D-1.1515AB-A E1AA	G1/8	1,5	1,5	0 – 26	0 – 23	0,08	0,07
84D-2.1515AB-A E1AA	G1/4						
84D-1.2020AB-A E1AA	G1/8	2,0	2,0	0 – 16	0 – 14	0,13	0,12
84D-2.2020AB-A E1AA	G1/4						
84D-1.2525AB-A E1AA	G1/8	2,5	2,5	0 – 11	0 – 10	0,19	0,18
84D-2.2525AB-A E1AA	G1/4						
84D-1.3030AB-A E1AA	G1/8	3,0	3,0	0 – 7	0 – 6	0,25	0,23
84D-2.3030AB-A E1AA	G1/4						

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 31 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

type 84E, 3/2 way solenoid valve with mixer function

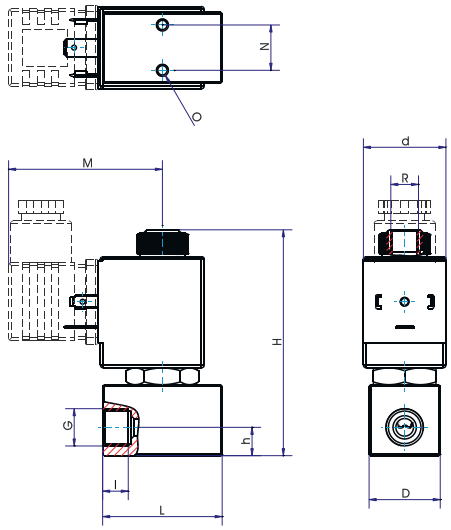
technical data on request according to the input pressures at 2 und p2.

type 84F, 3/2 way solenoid valve with distribution function

technical data on request according to the pressure level at 1,2 und R.

3/2 way solenoid valve normally closed or normally open

type 84, body brass
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4



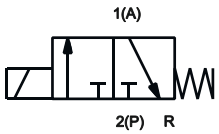
dimension table for type 84 in mm, weight approx. in g

G	N	O	H	h	I	L	D	R	coil E1AA		coil EXFA		coil E3AE		weight approx .g		
									M	d	M	d	M	d	coil E1AA	coil EXFA	coil E3AE
G 1/8	16	M4	80	10	9	42	25	G 1/8	52	30	45	30	54	36	360	700	446
G 1/4															350	690	436

3/2 way solenoid valve normally closed or normally open

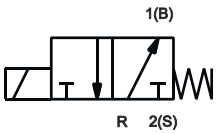
type 92, stainless steel body (AIS03)
direct operated, DN 1,2 – 2,5mm, G 1/8

operating mode C



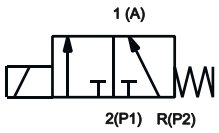
normally closed

operating mode D



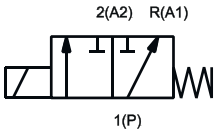
normally open

operating mode E



mixer function

operating mode F



distribution function

SPECIFICATION	
general	
type of construction	3/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G 1/8, tube with M5 female thread
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) bzw 3°E
material	body and tube: stainless steel 1.4305 (AISI 303) and 1.4105IL (AISI 430 FR) inner parts : stainless steel 1.4105IL (AISI 430 FR) sealing: see type selection
mounting	2 threads M3
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-200V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
max. body housing pressure	PN 40 (bar)
response time	12 – 20ms
special equipment on request	coil type with cable, coil EExmIIT5, coils for temperature class H (180°C), other sealing materials, manual override

3/2 way solenoid valve normally closed or normally open

type 92, stainless steel body (AIS03)
direct operated, DN 1,2 – 2,5mm, G 1/8

type 92C, 3/2 way solenoid valve normally closed, pressure port at 2 (P)					
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
		fluid compressed air	fluid water		
92C-1.1212CA-AC1DA…..	1,2	0 – 9	0 – 7	0,045	0,040
92C-1.1515BA-AC1DA…..	1,5	0 – 3	0 – 2,5	0,082	0,060
92C-1.2018BA-AC1DA…..	2,0	0 – 2	0 – 1,5	0,133	0,071
92C-1.2518BA-AC1DA…..	2,5	0 – 1	0 – 1	0,195	0,071
92C-1.1212FA-AC2DA…..	1,2	0 – 12	0 – 11	0,045	0,040
92C-1.1515FA-AC2DA…..	1,5	0 – 8	0 – 7	0,082	0,060
92C-1.2018DA-AC2DA…..	2,0	0 – 4,5	0 – 4	0,133	0,071
92C-1.2518DA-AC2DA…..	2,5	0 – 2,5	0 – 2,5	0,195	0,071
92C-1.1212GA-AC3AA…..	1,2	0 – 15	0 – 14	0,045	0,040
92C-1.1515GA-AC3AA…..	1,5	0 – 10	0 – 8	0,082	0,060
92C-1.2018FA-AC3AA…..	2,0	0 – 6	0 – 5,5	0,133	0,071
92C-1.2518EA-AC3AA…..	2,5	0 – 3,5	0 – 3,0	0,195	0,071

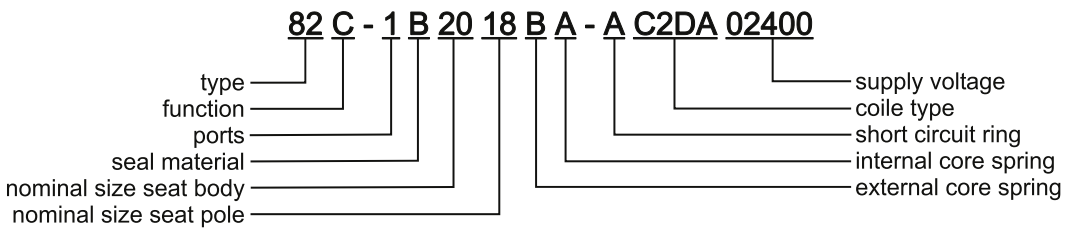
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 21 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 130 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
C1DA	9	5	3,0	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C2DA	13	10	6,5	IP65 / IP00	Connector (DIN 43650) type B industrial standard
C3AA	17	13	6,3	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

ORDER CODE



type	type 92
function	C = normally closed, D = normally open, E = mixer function, F= distribution function
ports	1 = G1/8 (body)
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat body	12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm
nominal size seat pole	12 = 1,2 mm, 15 = 1,5 mm, 18 = 1,8 mm
external core spring	Depends to the valve type, see specifications of the particular type
internal core spring	A = 3/2 NC, B = 3/2 NO
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

3/2 way solenoid valve normally closed or normally open

type 92, stainless steel body (AIS03)
direct operated, DN 1,2 – 2,5mm, G 1/8

type 92D, 3/2 way solenoid valve normally open, pressure port at 3 (R)					
type * (order-nr.)	NW DN (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
		~ (50Hz)	=(DC)		
92D-1.1212AB-AC1DA…..	1,2	0 – 2,8	0 – 1,8	0,045	0,040
92D-1.1515AB-AC1DA…..	1,5	0 – 1,8	0 – 0,6	0,082	0,060
92D-1.2018AB-AC1DA…..	1,8	0 – 1,2	0 – 0,5	0,133	0,071
92D-1.1212AC-AC2DA…..	1,2	0 – 3,8	0 – 3	0,045	0,040
92D-1.1515AC-AC2DA…..	1,5	0 – 2,5	0 – 1,5	0,082	0,060
92D-1.2018AC-AC2DA…..	1,8	0 – 1,7	0 – 1,3	0,133	0,071
92D-1.1212AD-AC3AA…..	1,2	0 – 5,8	0 – 4	0,045	0,040
92D-1.1515AD-AC3AA…..	1,5	0 – 4	0 – 2	0,082	0,060
92D-1.2018AD-AC3AA…..	1,8	0 – 2,5	0 – 1,8	0,133	0,071

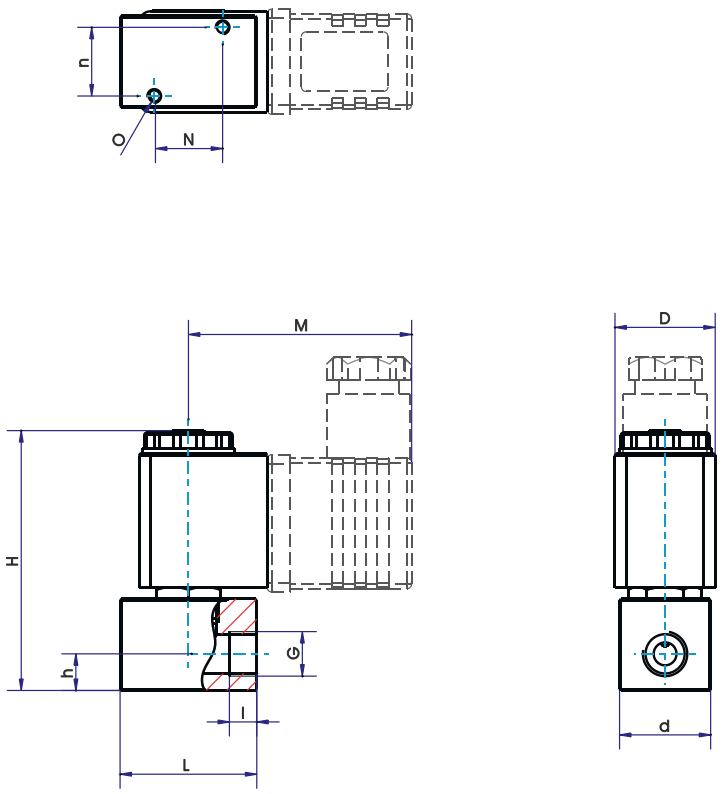
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 21 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

type 92E, 3/2 way solenoid valve with mixer function
technical data on request according to the input pressures at 2 and R.

type 92F, 3/2 way solenoid valve with distribution function
technical data on request according to the pressure level at 1,2 und R.

3/2 way solenoid valve normally closed or normally open

type 92, stainless steel body (AIS03)
direct operated, DN 1,2 – 2,5mm, G 1/8



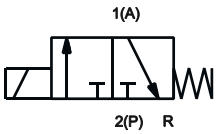
dimension table for type 92 in mm, weight approx. in g

with coil	N	n	M	h	H	G	O	I	L	D	d	weight (g)
C1DA	15	15	49	8	57	G 1/8	M3	6	30	22	20	142
C2DA												142
C3AA			53,5							30		197

3/2 way solenoid valve normally closed or normally open

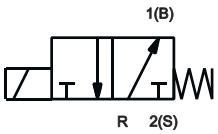
type 94, body stainless steel
direct operated, DN 1,5 – 4,0 mm, G1/4

operating mode C



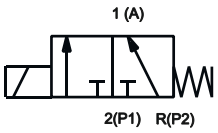
normally closed

operating mode D



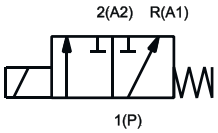
normally open

operating mode E



mixer function

operating mode F



distribution function

SPECIFICATION	
general	
type of construction	3/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operator	solenoid
ports	G1/4, tube with G1/8 female thread
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21mm²/s (cst) bzw 3°E
material	body and nozzle: stainless steel 1.4305 (AISI 303) inner parts and tube: stainless steel 1.4105IL (AISI 430FR) and 1.4305 (AISI303) sealing: see type selection
mounting	2 threads M4
installation	in any position, preferable vertical fixed solenoid coil
unit of supply	without connector
electrical data	
voltage	DC voltage or AC voltage
standard voltage	24V DC, 24V AC, 230V AC
special voltage on request	6V-207V DC, 12V-240V, 50Hz or 60Hz
acceptable voltage tolerance	+/- 10%
power consumption	see specifications at solenoid coils
coil type	temperature class F (155°C), winding class H (180°C)
duty cycle	100% ED (DB), continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
pneumatic – hydraulic	
flow medium	all liquids and gases, which don't attack the used material
response time	12 – 20ms
special equipment on request	coil type with cable, explotionproof coil, coils for temperature class H (180°C), manual override other sealing materials

3/2 way solenoid valve normally closed or normally open

type 94, body stainless steel
direct operated, DN 1,5 – 4,0 mm, G1/4

type 94C, 3/2 way solenoid valve normally closed, pressure port at 2 (P)					
type * (order-nr.)	ports	NW DN (mm)	maximum differential pressure in bar **	kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
94C-2.1515EA-A E1AA	G1/4	1,5	0-18	0,08	0,07
94C-2.2020EA-A E1AA		2,0	0-13	0,13	0,12
94C-2.2525EA-A E1AA		2,5	0-8	0,19	0,18
94C-2.3030EA-A E1AA		3,0	0-6	0,25	0,23
94C-2.3530EA-A E1AA		3,5	0-3,5	0,30	0,23
94C-2.4030EA-A E1AA		4,0	0-2,5	0,37	0,23
94C-2.1515FA-A E3AE		1,5	0-30	0,08	0,07
94C-2.2020FA-A E3AE		2,0	0-23	0,13	0,12
94C-2.2525FA-A E3AE		2,5	0-18	0,19	0,18
94C-2.3030FA-A E3AE		3,0	0-14	0,25	0,23
94C-2.3530FA-A E3AE		3,5	0-10	0,30	0,23
94C-2.4030FA-A E3AE		4,0	0-8	0,37	0,23

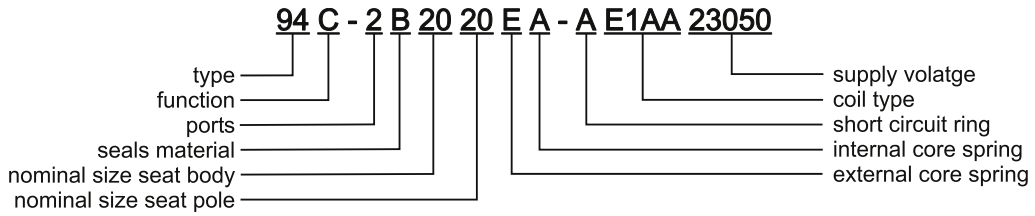
* Type designation (order-nr.) must be completeld with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

sealing material	Code	fluid temperature	applicable for
NBR (Perbunan)	**B**	max. 80 °C	neutral gases and liquids
EPDM	**E**	max. 120 °C	hot water, steam, not for oil and grease
FPM	**V**	max. 130 °C	oil, petrol, oxygen

standard voltage	Code
24V = DC	**02400**
24V ~ (50Hz)	**02450**
230V ~ (50Hz)	**23050**

coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power = (DC) (W)	protection class with/without connector	interface
E1AA	32	14	12	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A
E3AE	70	32	27	IP65 / IP00	Connector DIN EN 175301 – 803 (DIN 43650), type A

ORDER CODE



type	type 94
function	C = normally closed, D = normally open, E = mixer function, F= distribution function
ports	2 = G1/4
seal material	B = NBR (Perbunan), E = EPDM, V = FPM
nominal size seat body	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm, 35 = 3,5mm, 40 = 4,0 mm
nominal size seat pole	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm,
external core spring	A = normally open, E = normally closed (spring set 13N), F = normally closed (spring set 22N)
internal core spring	A = normally closed, B = normally open
short circuit ring	A = copper short circuit ring, X = without short circuit ring
coil type	see specifications of the particular coil
supply voltage	always 5-digit, see code of standard voltage

3/2 way solenoid valve normally closed or normally open

type 94, body stainless steel
direct operated, DN 1,5 – 4,0 mm, G1/4

type 94D, 3/2 way solenoid valve normally open, pressure port at 3 (R)							
type * (order-nr.)	threaded connection	NW DN body nozzle (mm)	NW DN pole nozzle (mm)	maximum differential pressure in bar **		kv-value body nozzle (m^3/h)	kv-value pole nozzle (m^3/h)
				fluid compressed air	fluid water		
94D-2. 5151AB-A E1AA	G1/4	1,5	1,5	0 – 26	0 – 23	0,08	0,07
94D-2.2020AB-A E1AA	G1/4	2,0	2,0	0 – 16	0 – 14	0,13	0,12
94D-2.2525AB-A E1AA	G1/4	2,5	2,5	0 – 11	0 – 10	0,19	0,18
94D-2.3030AB-A E1AA	G1/4	3,0	3,0	0 – 7	0 – 6	0,25	0,23

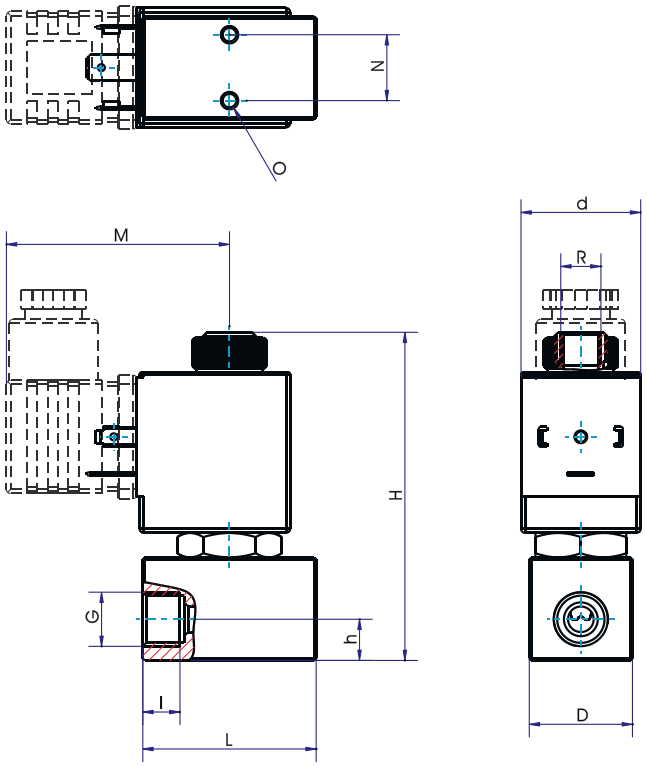
* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 31 cst. (3°E). Higher viscosities cause extended response time and need a special specification of the valve.

type 94E, 3/2 way solenoid valve with mixer function

technical data on request according to the input pressures at 2 und p2.

type 94F, 3/2 way solenoid valve with distribution function

technical data on request according to the pressure level at 1,2 und R.



dimension table for type 94 in mm, weight approx. in g

G	N	O	H	h	I	L	D	R	coil E1AA		coil EXFA		coil E3AE		weight approx .g		
									M	d	M	d	M	d	coil E1AA	coil EXFA	coil E3AE
G 1/4	16	M4	80	10	9	42	25	G 1/8	52	30	45	30	54	36	330	670	416

valve connectors with cable entry

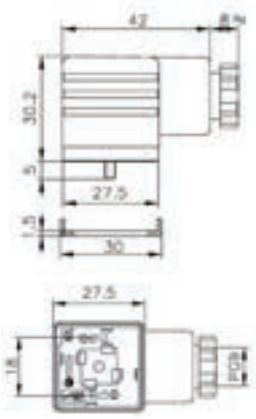
EN 175 301-803 (DIN 43650)

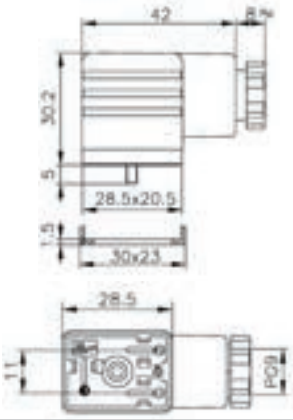
SPECIFICATION	
general	
device standard	EN 175301-803 (DIN 43650) Form A and C, Form D = ähnlich EN 175301-803 Form B
type of construction	Connector with screw terminals
cable entry	PG 7, PG 9 or PG 11
temperature range	-40 °C to +100 °C, with electronic components max.+80°C
material	PA 6 glass fiber-reinforced, contacts silver-plated
unit of supply	connector with profile seal in NBR and center screw M3
tightening torque	0,5 Nm for type A and D, 0,2 Nm for type C
maximum cable diameter	PG 7 = 4 – 6mm, PG 9 = 5 – 7mm, PG 11 = 6 – 9mm
electrical data	
voltage	DC voltage or AC voltage
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector
contact load	see specifications of the particular type
LED colour	yellow
max. wire cross section	1,5 mm² rigid wire at type A and D, 1 mm² rigid wire at type Form C
special version	flat seal in NBR or in silicone, profile seal in silicone

ORDER CODE	G S 2 A 09 L 230 connector — G colour — S number of contacts — 2 interface — A cabel entry — 09 electrical wiring — L supply voltage — 230
connector G	With cable entry and profile seal between coil and connector in NBR
colour	S = black, G = grey, T = transparent
number of contacts	2 = 2 + PE, 3 = 3 + PE
interface	A = DIN 43650A, C = DIN 43650C, D = similar to DIN 43650 B but industrial type
cable entry	07 = PG 7, 09 = PG 9, 11 = PG 11
electrical wiring	D = protecting diode, L = LED light diode + varistor, M = LED light diode + freewheeling diode, N = LED light diode + RC element, V = varistor, R = rectifier + varistor, X = RC element, Y = voltage reduction to a value <40 % after 0,6 seconds + LED light diode
supply voltage.	012 = 12 Volt, 024 = 24 Volt, 110 = 110 Volt, 230 = 230 Volt
Kind of current	AC = alternating current, DC = direct current, AD = direct or alternating current

valve connectors with cable entry

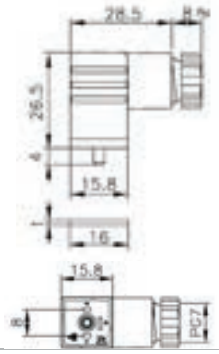
EN 175 301-803 (DIN 43650)

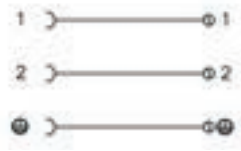
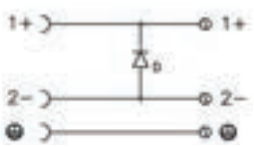
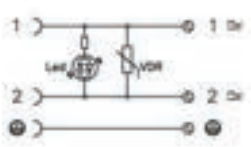
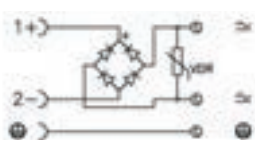
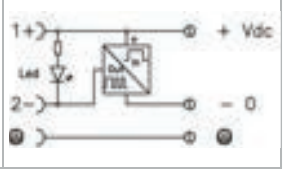
connectors according to DIN EN 175301-803 (DIN 43650), type A					
type order-nr.	voltage (V)	current	circuits	contact load max. (A)	
GS2A09	0 – 250	AC, DC	without	10	
GS2A09D230	0 – 230	DC	freewheeling diode	4	
GT2A09L024	24	AC, DC	LED + VDR	5	
GT2A09L230	230	AC, DC	LED + VDR	5	
GS2A09R024	24	AC, DC	rectifier + VDR	4	output voltage 20 Volt DC
GS2A09R230	230	AC, DC	rectifier + VDR	1	output voltage 207 Volt DC
GT2A09Y024	24	DC	power reduction	0,1 – 2	40% output power after 600msek.

connectors type D, similar to DIN EN 175301-803 (DIN 43650) type B					
type order-nr.	voltage (V)	current	circuits	contact load max. (A)	
GS2D09	0 – 250	AC, DC	without	10	
GS2D09D230	0 – 230	DC	freewheeling diode	4	
GT2D09L024	24	AC, DC	LED + VDR	5	
GT2D09L230	230	AC, DC	LED + VDR	5	

valve connectors with cable entry

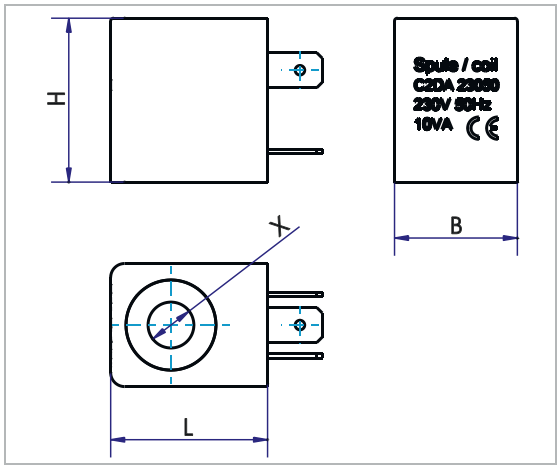
EN 175 301-803 (DIN 43650)

connectors according to DIN EN 175301-803 (DIN 43650) type C					
type order-nr.	voltage (V)	current	circuits	contact load max. (A)	
GS2C07	0 – 250	AC, DC	without	6	
GS2C07D230	0 – 230	DC	freewheeling diode	4	
GT2C07L024	24	AC, DC	LED + VDR	5	
GT2C07L230	230	AC, DC	LED + VDR	5	

circuits				
without	freewheeling diode (D)	LED + VDR (L)	rectifier (R)	power reduction (Y)
				

SVS encapsulated coils

system 05 - 19



SPECIFICATION	
ambient temperature	-20°C to +50°C, higher allowed ambient temperatures on request
fluid temperature	see specifications of the particular coil
material	winding copper, temperature class H (180°C), magnetic plate steel zinc plated, encapsulation material see specifications of the particular type
standard voltage	24V DC, 24V 50Hz, 230V 50Hz
special voltage on request	6 – 200V DC, 12 – 250V AC, please note – minimum quantities
general duty cycle	100% ED (DB), continuous operation unless stated otherwise
acceptable voltage tolerance	+/- 10% according to VDE0175 (DIN EC 60038)
special duty cycle	For coils with duty cycle < 100% ED the maximum duty cycle time is 2 minutes for system 5,7 and 9, and 3 minutes for system 13,16 und 19 according to VDE 0580.
protection class	IP65 according DIN EN 60529 (DIN 40050) only with correctly mounted connector and profile seal
special version	please note – minimum quantities must be ordered for special types

tube diameter (mm)	coil type	B (mm)	H (mm)	L (mm)	X (mm)	electrical interface	protection class *
5	A1G, A1I	10	14	14	4,7	Clip-connector radial	IP30
5	A1H, A1K	10	14	14	4,7	Clip-connector axial	IP30
5	A1E	10	14	14	4,7	strand 2-wires	IP65
7	B1C	15	26	21	6,6	EN 175301-803C (DIN 43650 C)	IP65
7	B1E	15	26	21	6,6	strand 2-wires	IP65
9	C1D, C2D	22	30	29	9	EN 175301-803 Form B	IP65
9	C3A	30	30	36	9	EN 175301-803A (DIN 43650 A)	IP65
13	E1A, E4A, E5A	30	39	38	13	EN 175301-803A (DIN 43650 A)	IP65
13	E2A, E3A	36	39	48	13	EN 175301-803A (DIN 43650 A)	IP65
16	F1A	Ø 39	50	45	16	EN 175301-803A (DIN 43650 A)	IP65
19	G1A	Ø 46	61	54	19	EN 175301-803A (DIN 43650 A)	IP65

* IP65 according DIN EN 60529 (DIN 40050) only with correctly mounted connector and profile seal

SVS encapsulated coils

system 05 - 19

electrical interface	
A	EN 175301-803A (DIN 43650 A)/ (ISO 4400)
B	EN 175301-803B (DIN 43650 B) / (ISO 4400)
C	EN 175301-803C (DIN 43650 C) / (ISO 4400)
D	similar EN 175301-803B (DIN 43650 B) but industrial type
E	cable / 2 wire connection
F	cable / 3 wire connection
G	clip-connector radial
H	clip-connector axial
I	clip-connector freewheeling diode + LED red, radial
K	clip-connector freewheeling diode + LED red, axial
M	cable connection box

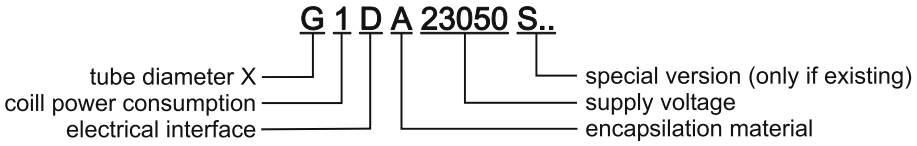
encapsulation material	
A = nylon 6 polyamide glass fiber-reinforced (PA 6)	encapsulation material, not useable for high humidity, insulation class F (max. 155 °C)
B = stanyl	
D = polybutylene terephthalate (PBT)	well suited for high humidity, not suitable for high temperatures, insulation class F (max. 155 °C)
E = polyarylamide (PAA)	well suited for high temperatures, also known as trademark IXEF insulation class H (180 °C), high strength
F = epoxy resin	well suited for high temperatures and high humidity insulation class H (180 °C)
G = polyphenylene sulphide (PPS)	well suited for high temperatures but not suitable for high humidity insulation class H (180 °C)
H = polyethylene terephthalate (PET)	Rynite, well suited for high humidity and high temperatures insulation calss H (180 °C), high strength

Please note: Not each coil size can be delivered with all encapsulation materials. See all available coil types at the particular solenoid system.

supply voltage	code
230V 50Hz	23050
24V 50 Hz	02450
110V 60 Hz	11050
12V direct current DC	01200
24V direct current DC	02400

Voltage must always be ordered with 5-digits.

ORDER CODE	G 1 D A 23050 S..
tube diameter X	A = 5mm, B = 7mm, C = 9mm, E = 13mm, F = 16mm, G = 19mm
coil power consumption	see specifications of the particular coil
electrical interface	see table electrical interface
encapsulation material	see table encapsulation material
special version	Only if existing, for ex. cable length, otherwise voltage according to encapsulation material
Supply voltage	always 5-digit, see voltage information's



SVS encapsulated coils

system 05 - 19

tube diameter	coil type	electrical interface	temp. class	max. fluid tempera-ture	encapsula-tion material	power consumption			
						Direct current DC (W)		Alternating current AC (VA)	
						cold	warm	inrush	rated
05	A1GA	clip radial	F (155 °C)	80 °C	PA 6	1,3	1,15	-	-
	A1IA	clip radial, LED, diode	F (155 °C)	60 °C	PA 6	1,3	1,15	-	-
	A1HA	clip axial	F (155 °C)	80 °C	PA 6	1,3	1,15	-	-
	A1KA	clip axial, LED, diode	F (155 °C)	60 °C	PA 6	1,3	1,15	-	-
	A1EA	cable 300mm	F (155 °C)	100 °C	PA 6	1,3	1,15	-	-
07	B1CA	EN 175301-803C (DIN 43650 C)	F (155 °C)	130 °C	PA 6	2,65	2,3	3,3	2,8
	B1EA*	cable 2-wire, length 300mm	F (155 °C)	130 °C	PA 6	2,65	2,3	3,3	2,8
	B1CH	EN 175301-803C (DIN 43650 C)	F (155 °C)	130 °C	Rynite	2,65	2,3	3,3	2,8
	B1EH*	cable 2-wire length 300mm	F (155 °C)	130 °C	Rynite	2,65	2,3	3,3	2,8
09	C1DA	EN 175301-803B (DIN 43650 B), industrial type	F (155 °C)	130 °C	PA 6	3,0	2,5	9	5
	C2DA	EN 175301-803B (DIN 43650 B), industrial type	F (155 °C)	130 °C	PA 6	6,5	5	13	10
	C3AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	130 °C	PA 6	6,3	5,2	17	13
13	E1AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	120 °C	PA 6	12	9	32	14
	E2AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	100 °C	PA 6	17	12	42	19
	E3AE	EN 175301-803A (DIN 43650 A)	H (180 °C)	140 °C	PAA	27	18	70	32
	E4AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	100 °C	PA 6	10	8	-	-
	E5AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	100 °C	PA 6	8	7	-	-
16	F1AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	100 °C	PA 6	27	19	70	35
19	G1AA	EN 175301-803A (DIN 43650 A)	F (155 °C)	100 °C	PA 6	32	23	80	40

order example: solenoid diameter 09, 10VA rated power, 24V, 50Hz: *C2DA02450*

solenoid diameter 16, 30VA rated power, 230V, 50Hz: *F1AA23050*

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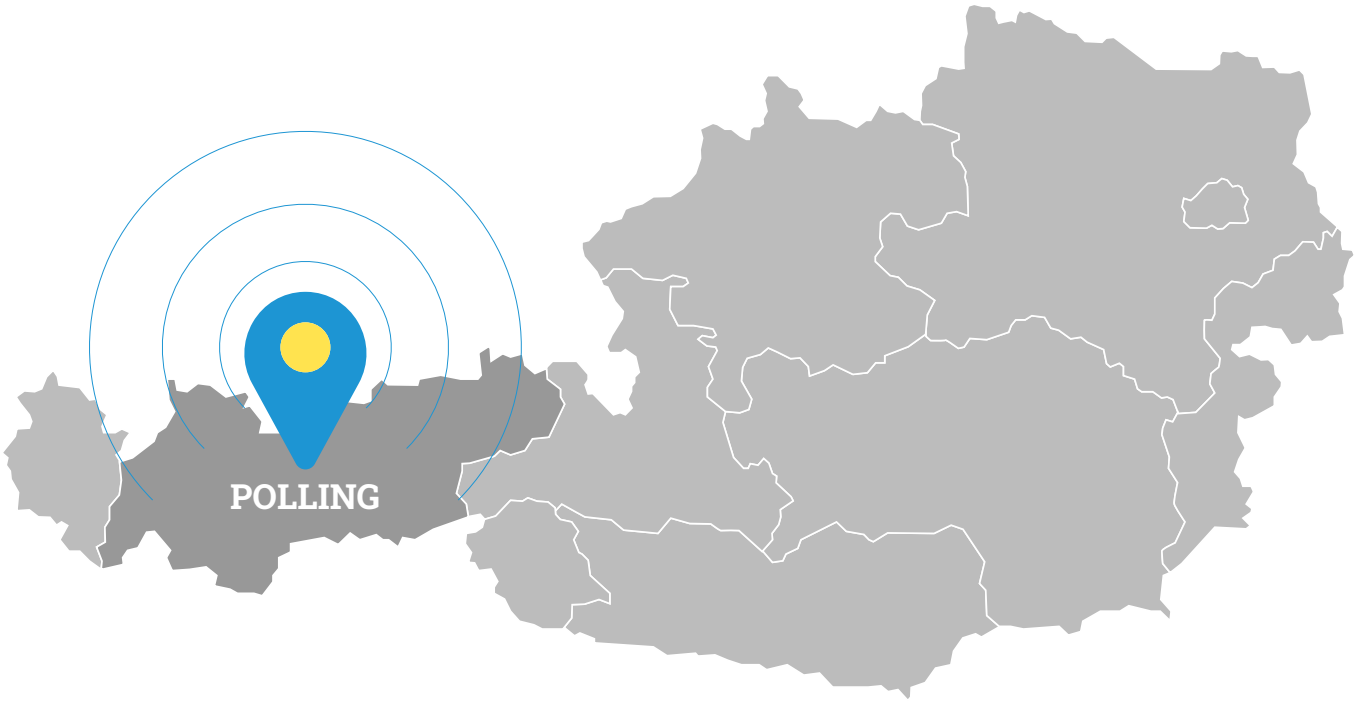
From the heart of Tyrol out into the whole world

We are passionate about serving our international customers and partners with innovation special solutions.



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