

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



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 mm ² /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

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type 21A, normally closed											
type * (order-nr.)	NW DN (mm)	ports	maximum differential pressure in bar **								kv-value (m ³ /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	standard voltage	Code
NBR (Perbunan)	C	max. 80°C	neutral gases and liquids	24V = DC	02400
EPDM	F	max. 120°C	hot water, steam, not for oil and grease	24V ~ (50Hz)	02450
PTFE***	T	max. 150°C	acids and alkaline solution, steam	230V ~ (50Hz)	23050
FPM	W	max. 130°C	oil, petrol, oxygen, acids and bases		

*** 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.

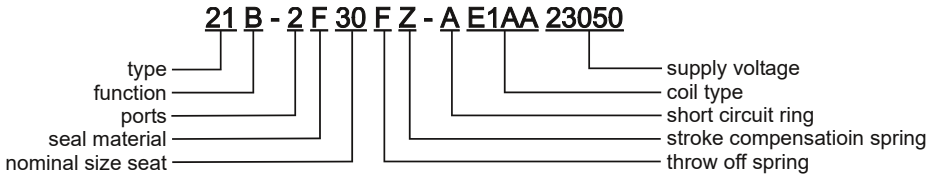
coil power consumption at 20 °C, protection class, interface					
coil type	inrush power ~ (50Hz) VA	rated power ~ (50Hz) VA	power*** = (DC) (W)	protection class with/without connector	interface
E1AA*	32	14	12	IP65 / IP00	Connector DIN EN 175301-803 (DIN 43650) type A
E2AA*	42	17	17	IP65 / IP00	Connector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

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order code	21 B - 2 F 30 F Z - A E1AA 23050 
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 (m ³ /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		

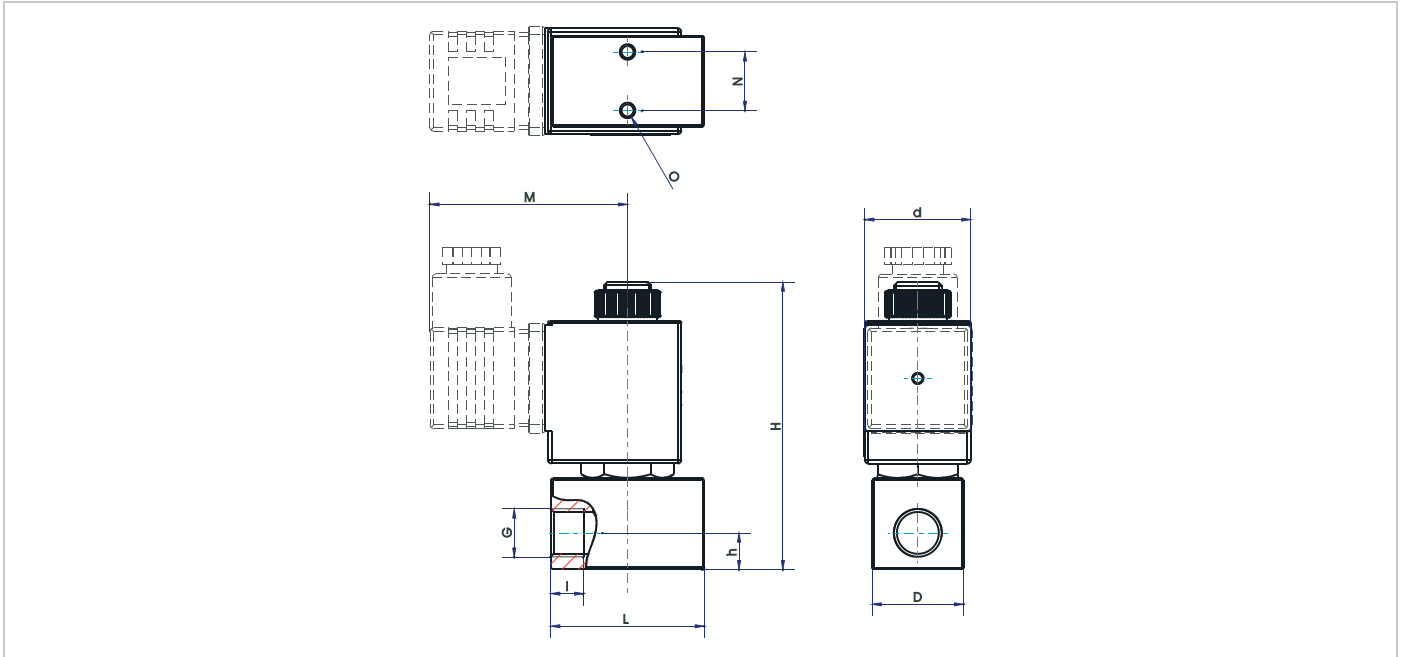
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** Higher differential pressure on request.

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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	38	710	730						
	F1			57	90	93	526					516	
G 1/4	E1	16	M4	55.1	79	86	30	9	42	25	360	380	
	E2			57			35				426	446	
	E3			56	36	446	466						
	EX			54	38	700	720						
	F1			57	90	93	516				506		