

2/2-WAY SOLENOID VALVE

TYPE 21



O₂ oxygene applications



DESCRIPTION

Valve type 21 is a 2/2-way direct acting solenoid valve for general applications with gases and liquids for medium to high pressure.

CONSTRUCTION

Body material	brass
Internal parts	brass and stainless steel
Sealing material	NBR, EPDM, FPM, PTFE
Voltages	24 V DC, 24 V 50Hz, 230 V 50Hz
Connections	G1/8 - G1/4

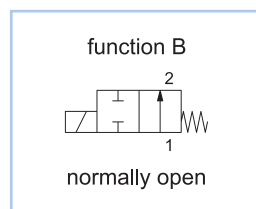
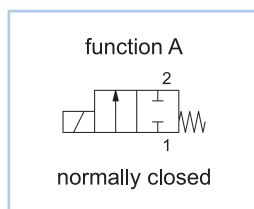
ON REQUEST

Valve for oxygene applications
 Non-standard coil voltages
 Higher ambient temperature range
 Non-standard equipment
 Manual override

SWITCHING PRESSURE

Orifice in mm	Normally closed in bar	Normally open in bar
1,5	100,0	-
2,0	90,0	-
2,5	80,0	-
3,0	60,0	-
3,5	36,0	-
4,0	25,0	-
See details on the website		

VARIANTS



DETAILED INFORMATION

General	
type of construction	2/2-way poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operation	electrically, on request: manual override
ports	G1/8 - G1/4
ambient temperature	-20°C to +50°C, higher acceptable ambient temperature range on request
fluid temperature	dependent on sealing material and coil
viscosity	max. 21 mm ² /s (cst)
material	body: brass plunger tube: AISI 303 internal 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 vertically fixed solenoid coil
unit of supply	without connector

Electrical	
voltage	DC voltage or AC voltage
standard voltages	24 V DC, 24 V 50Hz, 230 V 50Hz
non-standard voltage on request	6 V - 200 V DC, 12 V - 240 V 50Hz or 60Hz
acceptable voltage tolerance	±10%
power consumption	see specifications at solenoid coils
coil temperature classification	temperature class F (155°C), winding & coil E3 temperature class H (180°C)
duty cycle	100%, continuous operation
protection class	IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector

Pneumatic – Hydraulic	
fluid	all liquids and gases, non-aggressive to the used material
max. valve body pressure	PN 100
response time	depending on operating pressure and fluid
non-standard equipment on request	stainless steel AISI 303 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

CONFIGURATION & PRESSURE RANGE

Coil power consumption at 20°C			
coil type	inrush power 50Hz in VA	rated power 50Hz in VA	power DC in W
E5AA	-	-	8
E4AA	-	-	10
E1AA	32	14	12
E2AA	42	19	17
E3AE	70	32	27
F1AA	70	35	27

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NORMALLY CLOSED VALVES

Type 21A, normally closed									
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar						
			coil E5AA		coil E4AA		coil E1AA		
			50Hz	DC	50Hz	DC	50Hz	DC	
21A-1.15-A...	1,5	G1/8	-	60,0	-	70,0	65,0	75,0	
21A-2.15-A...	1,5	G1/4	-	60,0	-	70,0	65,0	75,0	
21A-1.20-A...	2,0	G1/8	-	18,0	-	28,0	30,0	35,0	
21A-2.20-A...	2,0	G1/4	-	18,0	-	28,0	30,0	35,0	
21A-1.25-A...	2,5	G1/8	-	12,0	-	12,0	25,0	20,0	
21A-2.25-A...	2,5	G1/4	-	12,0	-	12,0	25,0	20,0	
21A-1.30-A...	3,0	G1/8	-	4,4	-	5,6	12,0	8,0	
21A-2.30-A...	3,0	G1/4	-	4,4	-	5,6	12,0	8,0	
21A-1.35-A...	3,5	G1/8	-	2,6	-	3,6	10,0	5,0	
21A-2.35-A...	3,5	G1/4	-	2,6	-	3,6	10,0	5,0	
21A-1.40-A...	4,0	G1/8	-	2,1	-	2,7	8,0	3,0	
21A-2.40-A...	4,0	G1/4	-	2,1	-	2,7	8,0	3,0	

NORMALLY OPEN VALVES

Type 21B, normally open									
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar						
			coil E5AA		coil E4AA		coil E1AA		
			50Hz	DC	50Hz	DC	50Hz	DC	
More technical data is available on request and with notification of the exact pressure values at the connections									

CONFIGURATION & PRESSURE RANGE

Sealing material	Code	Fluid temperature	Applicable for
NBR (Perbunan)	C	-10°C to 80°C	neutral gases and liquids
EPDM	F	-10°C to 130°C	hot water, steam, not for oil and grease
FPM	W	-10°C to 130°C	oil, petrol, oxygen
PTFE	T	-10°C to 150°C	acids and alkaline solution, steam

Type 21A, normally closed							
maximum differential pressure in bar							kv-value in m ³ /h
coil E2AA		coil E3AE		coil F1AA			
50Hz	DC	50Hz	DC	50Hz	DC		
75,0	90,0	85,0	95,0	100,0	100,0	0,08	
75,0	90,0	85,0	95,0	100,0	100,0	0,08	
60,0	65,0	75,0	75,0	90,0	90,0	0,13	
60,0	65,0	75,0	75,0	90,0	90,0	0,13	
45,0	60,0	53,0	65,0	60,0	80,0	0,19	
45,0	60,0	53,0	65,0	60,0	80,0	0,19	
25,0	40,0	32,0	50,0	45,0	60,0	0,25	
25,0	40,0	32,0	50,0	45,0	60,0	0,25	
17,0	18,0	26,0	31,0	30,0	36,0	0,30	
17,0	18,0	26,0	31,0	30,0	36,0	0,30	
12,0	15,0	17,0	20,0	20,0	25,0	0,37	
12,0	15,0	17,0	20,0	20,0	25,0	0,37	

Type 21B, normally open							
maximum differential pressure in bar							kv-value in m ³ /h
coil E2AA		coil E3AE		coil F1AA			
50Hz	DC	50Hz	DC	50Hz	DC		
More technical data is available on request and with notification of the exact pressure values at the connections							

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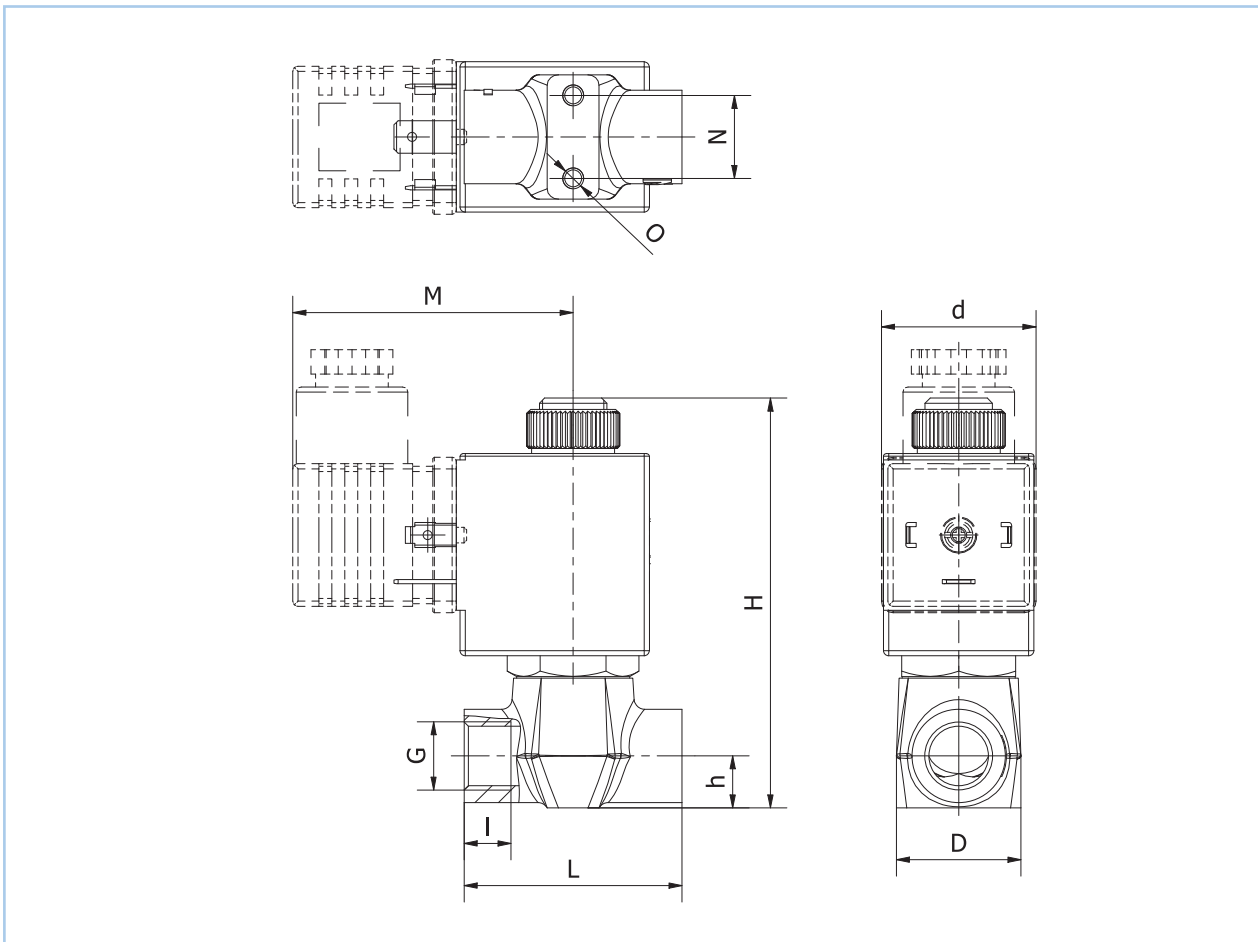


O_2 oxygene applications

ORDER CODE

Type 21A, normally closed												
order code	21	A	-	2	F	30	-	A	E1AA	23050		
Type 21B, normally open												
order code	21	B	-	2	F	30	F	Z	-	A	E1AA	23050
Code decoding												
type	type 21, direct operated, body: brass, plunger tube: stainless steel											
function	A = normally closed, B = normally open											
ports	1 = G1/8, 2 = G1/4											
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	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-digits, see code for standard voltage											

DIMENSIONS



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

coil	G	N	O	M	H		d	h	I	L	D	approx. weight in g	
					type 21A	type 21B						type 21A	type 21B
E1	G1/8	16	M4	55	79	86	30	10	8	42	24	283	303
E2	G1/8	16	M4	57	79	86	35	10	8	42	24	349	369
E3	G1/8	16	M4	56	79	86	36	10	8	42	24	369	389
F1	G1/8	16	M4	57	90	96	38	10	8	42	24	439	429
E1	G1/4	16	M4	55	79	86	30	10	9	42	24	273	293
E2	G1/4	16	M4	57	79	86	35	10	9	42	24	339	359
E3	G1/4	16	M4	56	79	86	36	10	9	42	24	359	379
F1	G1/4	16	M4	57	90	96	38	10	9	42	24	429	419