

3/2-WAY SOLENOID VALVE

TYPE 94



O₂ oxygene applications



DESCRIPTION

Valve type 94 is a 3/2-way direct acting solenoid valve for general applications with gases and liquids for low to medium pressures.

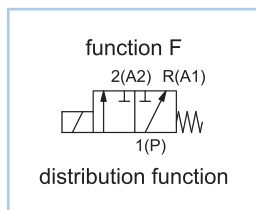
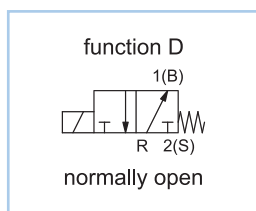
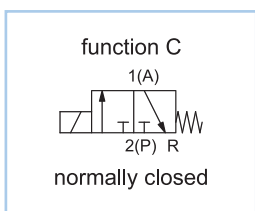
CONSTRUCTION

Body material	stainless steel
Internal parts	stainless steel
Sealing material	NBR, EPDM, FPM
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

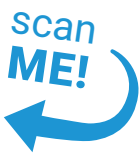
VARIANTS



SWITCHING PRESSURE

Orifice in mm	Normally closed in bar	Normally open in bar
1,0	40,0	-
1,5	30,0	10,0
2,0	24,0	10,0
2,5	16,0	6,5
3,0	12,0	5,8
3,5	8,0	5,5
4,0	6,0	5,4

See details on the website



DETAILED INFORMATION

General	
type of construction	3/2-way poppet valve, normally closed NC or normally open NO, coil 360° rotatable
operation	electrically, on request: manual override
ports	G1/8 - G1/4, tube with G1/8 female thread
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 and nozzle: AISI 303 plunger tube: AISI 430 internal parts: AISI 303 sealing: see type selection
mounting	2 threads M4
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 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 64
response time	12 - 20 ms
non-standard equipment on request	coil type with cable, coils for temperature class H (180°C), higher differential pressure, other sealing materials

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

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NORMALLY CLOSED VALVES

Type 94C, 3/2-way solenoid valve, normally closed, pressure at port 2 (P)													
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar										
			coil E5AA				coil E4AA				coil E1AA		
			fluid compr. air		fluid water		fluid compr. air		fluid water		fluid compr. air		
			50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC	
94C-2.1015EA-....	1,0	G1/4	-	32,0	-	32,0	-	32,0	-	32,0	32,0	32,0	
94C-2.1515EA-....	1,5	G1/4	-	20,0	-	20,0	-	20,0	-	20	20	20,0	
94C-2.2020EA-....	2,0	G1/4	-	13,0	-	13,0	-	13,0	-	13	13	13,0	
94C-2.2525EA-....	2,5	G1/4	-	8,0	-	8,0	-	8,0	-	8	8	8,0	
94C-2.3030EA-....	3,0	G1/4	-	6,0	-	6,0	-	6,0	-	6	6	6,0	
94C-2.3530EA-....	3,5	G1/4	-	3,5	-	3,5	-	3,5	-	3,5	3,5	3,5	
94C-2.4030EA-....	4,0	G1/4	-	2,2	-	2,2	-	2,2	-	2,2	2,2	2,2	
94C-2.1015FA-....	1,0	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.1515FA-....	1,5	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.2020FA-....	2,0	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.2525FA-....	2,5	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.3030FA-....	3,0	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.3530FA-....	3,5	G1/4	-	-	-	-	-	-	-	-	-	-	
94C-2.4030FA-....	4,0	G1/4	-	-	-	-	-	-	-	-	-	-	

CONFIGURATION & PRESSURE RANGE

Sealing material	Code	Fluid temperature	Applicable for
NBR (Perbunan)	B	-10°C to 80°C	neutral gases and liquids
EPDM	E	-10°C to 130°C	hot water, steam, not for oil and grease
FPM	V	-10°C to 130°C	oil, petrol, oxygen

Type 94C, 3/2-way solenoid valve, normally closed, pressure at port 2 (P)

maximum differential pressure in bar											kv-value body nozzle in m ³ /h	kv-value pole nozzle in m ³ /h
coil E1AA		coil E2AA				coil E3AE						
fluid water		fluid compr. air		fluid water		fluid compr. air		fluid water				
50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC			
32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	0,030	0,070
20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	0,080	0,070
13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	0,130	0,120
8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	0,190	0,180
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	0,250	0,230
3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	0,300	0,230
2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	0,370	0,230
-	-	-	40,0	40,0	40,0	-	40,0	40,0	40,0	40,0	0,030	0,070
-	-	-	30,0	30,0	30,0	-	30,0	30,0	30,0	30,0	0,080	0,070
-	-	-	24,0	24,0	24,0	-	24,0	24,0	24,0	24,0	0,130	0,120
-	-	-	16,0	16,0	16,0	-	16,0	16,0	16,0	16,0	0,190	0,180
-	-	-	12,0	12,0	12,0	-	12,0	12,0	12,0	12,0	0,250	0,230
-	-	-	8,0	8,0	8,0	-	8,0	8,0	8,0	8,0	0,300	0,230
-	-	-	6,0	6,0	6,0	-	6,0	6,0	6,0	6,0	0,370	0,230

3/2-WAY SOLENOID VALVE

TYPE 94



O_2 oxygene applications

NORMALLY OPEN VALVES

Type 94D, 3/2-way solenoid valve, normally open, pressure at port R												
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar									
			coil E5AA				coil E4AA				coil E1AA	
			fluid compr. air		fluid water		fluid compr. air		fluid water		fluid compr. air	
			50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC
94D-2.1515AB-AE	1,5	G1/4	-	6,5	-	7,5	-	7,0	-	7,5	8,2	7,5
94D-2.2020AB-AE	2,0	G1/4	-	3,5	-	7,5	-	4,3	-	7,5	5,0	4,5
94D-2.2525AB-AE	2,5	G1/4	-	2,8	-	3,5	-	2,9	-	4,5	3,8	3,2
94D-2.3030AB-AE	3,0	G1/4	-	2,0	-	2,1	-	2,3	-	2,5	3,5	2,5
94D-2.3530AB-AE	3,5	G1/4	-	1,8	-	1,5	-	1,9	-	1,9	3,5	2,0
94D-2.4030AB-AE	4,0	G1/4	-	1,5	-	1,3	-	1,8	-	1,6	3,0	1,8

MIXER FUNCTION

Type 94E, 3/2-way solenoid valve, mixer function, input at port 2 and R								
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar				kv- value body nozzle in m ³ /h	kv- value pole nozzle in m ³ /h
			50Hz		DC			
			2(P1)	R(P2)	2(P1)	R(P2)		
More technical data is available on request and with notification of the exact pressure values at the connections								

Type 94D, 3/2-way solenoid valve, normally open, pressure at port R												
maximum differential pressure in bar											kv-value body nozzle in m ³ /h	kv-value pole nozzle in m ³ /h
coil E1AA		coil E2AA				coil E3AE						
fluid water		fluid compr. air		fluid water		fluid compr. air		fluid water				
50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC	50Hz	DC			
7,5	7,5	10,0	10,0	7,5	7,5	10,0	10,0	7,5	7,5	0,080	0,070	
7,5	7,5	7,0	6,0	7,5	7,5	10	7,0	7,5	7,5	0,130	0,120	
5,8	5,0	5,8	4,5	5,8	5,8	6,5	5,0	5,8	5,8	0,190	0,180	
3,8	2,8	5,0	3,5	3,8	3,8	5,8	4,5	3,8	3,8	0,250	0,230	
3,0	2,2	5,0	3,0	3,8	3,8	5,5	3,9	3,8	3,8	0,300	0,230	
2,8	1,9	5,0	2,8	3,8	3,4	5,4	3,4	3,8	3,8	0,370	0,230	

DISTRIBUTION FUNCTION

Type 94F, 3/2-way solenoid valve, distribution function, input at port 1						
type (order-no.)	NW DN in mm	ports	maximum differential pressure in bar		kv-value body nozzle in m ³ /h	kv-value pole nozzle in m ³ /h
			50Hz	DC		
More technical data is available on request and with notification of the exact pressure values at the connections						

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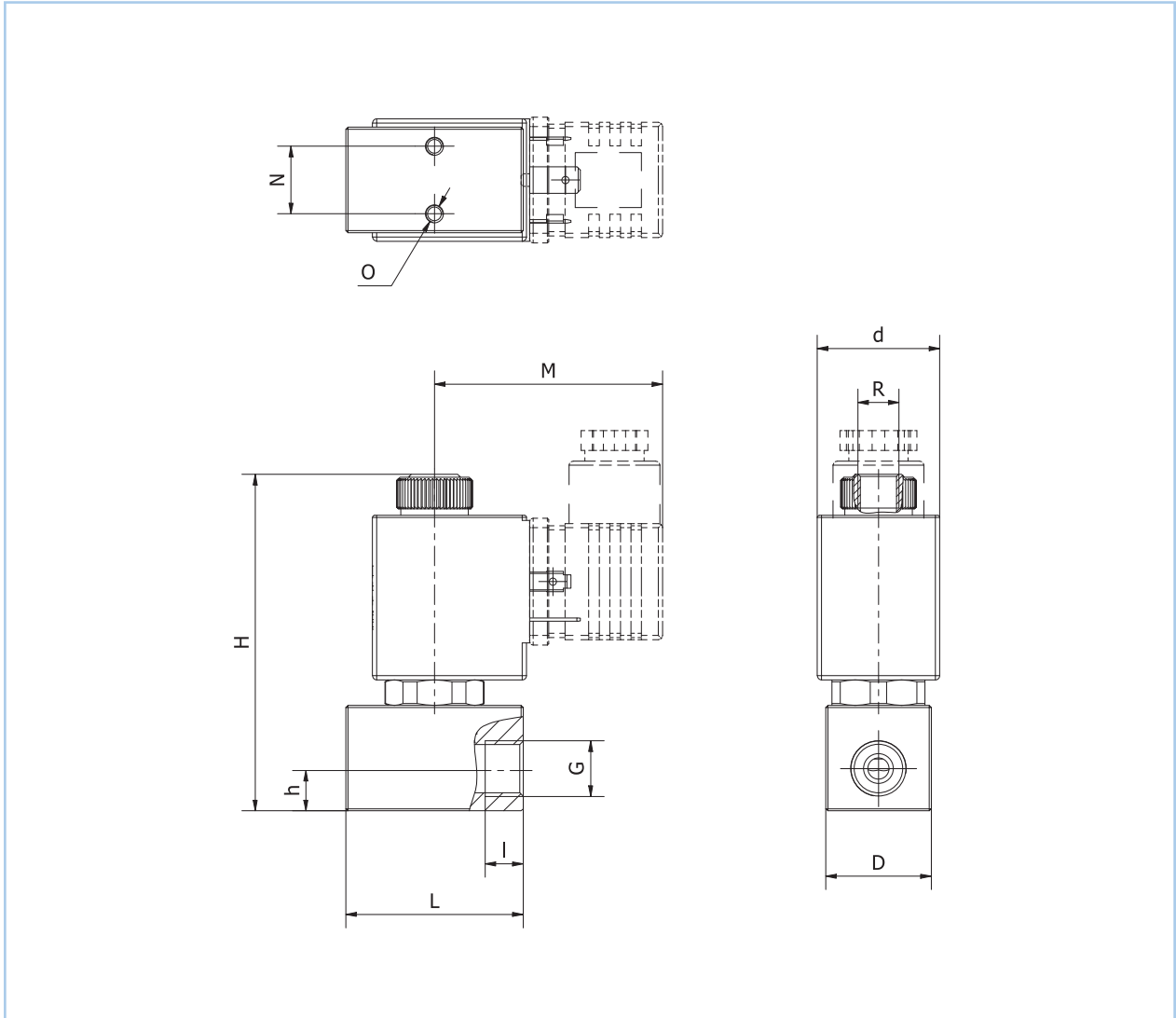


O_2 oxygene applications

ORDER CODE

Type 94													
order code	94	C	-	2	B	20	20	E	A	-	A	E1AA	23050
Code decoding													
type	type 94, direct operated, body: brass, plunger tube: stainless steel												
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	10 = 1,0 mm, 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm, 35 = 3,5 mm, 40 = 4,0 mm												
nominal size pole	15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm												
external plunger spring	Depends to the valve type, see specifications of the particular type												
internal plunger spring	A = 3/2-way NC, B = 3/2-way 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-digits, see code for standard voltage												

DIMENSIONS



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

G	N	O	H	h	I	L	D	R	coil E1AA		coil E3AE		approx. weight in g	
									M	d	M	d	coil E1AA	coil E3AE
G1/8	16	M4	80	10	7,5	42	24	G1/8	52	30	54	36	339	425
G1/4	16	M4	80	10	9	42	24	G1/8	52	30	54	36	330	416