

Ball Sector Motor Valve 4037

ex-proof
1" up to 4"



- Nominal sizes 1" up to 4"
- Robust aluminium body of the actuator
- Excellent control characteristics
- Universal voltage supply
- Easily exchangeable seat ring
- Low maintenance
- Adjustable stroking times
- Protection class IP 66
- Manual emergency adjustment
- Efficient and easy to install
- Integrated heating system
- Spring return function on demand
- optional with face to face dimension acc. ANSI ISA 75.08.02



Technical Information Valve

Design	flangeless, wafer type	
Nominal sizes	1" up to 4"	
Body material	cast parts	316L (CF8M)
	turned parts	316 L (1.4404)
Bearing material	high temperature plain bearing (Iglidur Z)	
Nominal pressure	1" - 2"	ANSI300, ANSI150, 580 psi (for flanges 145 psi - 580 psi)
	3" - 4"	ANSI 150
Fluid Temperature	-76°F up to +428°F depending on the sealings	
Ambient temperature	-40°F up to +122°F	
Vacuum	up to 1,48 mercury (Hg)	
Characteristic	almost equal percentage	
Rangeability	100:1	
Specific leakage rate shaft and body sealing	series KS2, DN25-DN250: ISO FE-BH-CC3-SSA0-t(-40°C/+220°C)-PN40-ISO 15848-1 series KS1, DN300: ISO FE-BH-CC1-SSA0-t(RT)-PN16-ISO 15848-1	

Data of the actuator

Voltage supply	24 ... 230 V AC/DC
Protection class	IP 66
Input signal	4-20 mA or 0-10 V
Feedback signal	4-20 mA or 0-10 V
Ambient Temperature	T5: -40°F up to 104°F T6: -40°F up to 122°F
Motor	Brushless DC Motor
Maintenance	Maintenance free actuator
Diameter of cable	~Ø 0,28 inch and ~Ø 0,29 inch - 39,37 inch cable (for on/off different)
Reverse function	Bridge between clamp 3 and 4
Holding Power	20 W (~16 W when heating)
Current consumption initialization	2 A

ATEX - Versions

EX-Protection (gas)	II 2G Ex d [ia] IIC T6, T5	Zone 1 and 2
EX-Protection (dust)	II 2D Ex tD [iaD] A21 IP66 T80, T95°C	Zone 21 and 22
EX-Protection (gas)	II 3G Ex nC II T6 / II 3(1)G Ex nC [ia] IIC T6	Zone 2
EX-Protection (dust)	II 3D Ex tD A22 IP66 T80°C	Zone 22
Industrial applications without Ex certification	none	

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Working pressure

Size	maximum differential pressure (delta p)									
	seat ring PTFE			seat ring PEEK				seat ring Stellite		
	up to 176°F	248°F	338°F	up to 176°F	248°F	338°F	428°F	up to 176°F	338°F	428°F
	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi
1" - 2"	365	230	85	580	580	365	230	580	580	365
3" - 4"	230	175	75	365	365	230	145	365	365	230

Temperature limits

Seating	Sealing seating							
	Viton		EPDM		NBR		FFKM	
	Tmin [°F]	Tmax [°F]	Tmin [°F]	Tmax [°F]	Tmin [°F]	Tmax [°F]	Tmin [°F]	Tmax [°F]
PTFE	5	338	-40	284	-22	212	5	338
PEEK	5	392	-40	284	-22	212	5	428
Stellite	5	392	-40	284	-22	212	5	428

Leakage

Seat ring	Ball sector	Leakage	
		Amount of the max. Kvs-value	class acc. EN 60534-4: (IEC 60534-4)
PTFE or PEEK	stainless steel polished	5x10 ⁻⁷	IV-S1
PTFE or PEEK	stainless steel lapped		VI
PTFE or PEEK	stainless steel hard chrome plated	5x10 ⁻⁷	IV-S1
PTFE or PEEK	stainless steel, hard chrome plated + lapped		VI
Stellite	stainless steel, hard chrome plated + lapped	5x10 ⁻⁶	IV-S1

Kvs-Values

Size	Cvs-value reduced to				
	100%	63%	40%	25%	6,3%
1"	24.6	14.9	9.83	6.14	1.7
1 1/2"	81	47.2	29.3		
2"	126	70.6			
2 1/2"	175				
3"	348				
4"	456				

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Rotary time settings / rated current

rotary switch setting	rotation time	size 1" up to 2"			rotation time	size 1" (with spring return)		
		actuator torque	rated current			actuator torque	rated current	
			24V	230V			24V	230V
0	3/7.5 sec/90°	15 Nm	4.7 A	0.5 A	3/7.5 sec/90°	15 Nm	4.7 A	0.5 A
1	15 sec/90°		1.45 A	0.3 A	15 sec/90°		1.45 A	0.3 A
2	30 sec/90°		0.52 A	0.15 A	30 sec/90°		0.52 A	0.15 A
3	60 sec/90°		0.4 A	0.1 A	60 sec/90°		0.4 A	0.1 A
4	120 sec/90°		0.4 A	0.1 A	120 sec/90°		0.4 A	0.1 A
5	7.5 sec/90°	30 Nm	4.7 A	0.5 A	7.5 sec/90°	30 Nm	4.7 A	0.5 A
6	15 sec/90°		1.45 A	0.3 A	15 sec/90°		1.45 A	0.3 A
7	30 sec/90°		0.52 A	0.15 A	30 sec/90°		0.52 A	0.15 A
8	60 sec/90°		0.4 A	0.1 A	60 sec/90°		0.4 A	0.1 A
9	120 sec/90°		0.4 A	0.1 A	120 sec/90°		0.4 A	0.1 A

spring return about 3 or 10 sec./90°

Standard

rotary switch setting	rotation time	size 1 1/2", 2", 3" (with spring return)			rotation time	size 3" up to 4"		
		actuator torque	rated current			actuator torque	rated current	
			24V	230V			24V	230V
0	40 sec/90°	30 Nm (50Nm size 3")	2.0 A	0.4 A	40 sec/90°	50 Nm	1.0 A	0.3 A
1	60 sec/90°		1.8 A	0.3 A	60 sec/90°		0.7 A	0.2 A
2	90 sec/90°		1.4 A	0.15 A	90 sec/90°		0.5 A	0.15 A
3	120 sec/90°		1.4 A	0.1 A	120 sec/90°		0.4 A	0.1 A
4	150 sec/90°		1.4 A	0.1 A	150 sec/90°		0.4 A	0.1 A
5	40 sec/90°	75 Nm	2.0 A	0.4 A	40 sec/90°	75 Nm	1.0 A	0.3 A
6	60 sec/90°		1.8 A	0.3 A	60 sec/90°		0.7 A	0.2 A
7	90 sec/90°		1.4 A	0.15 A	90 sec/90°		0.5 A	0.15 A
8	120 sec/90°		1.4 A	0.1 A	120 sec/90°		0.4 A	0.1 A
9	150 sec/90°		1.4 A	0.1 A	150 sec/90°		0.4 A	0.1 A

spring return about 20 sec./90°

Standard

Wiring diagram (further more in the operating instructions)

Control

Options within every control actuator:
 Jumper I: inverse the control and feedback signal

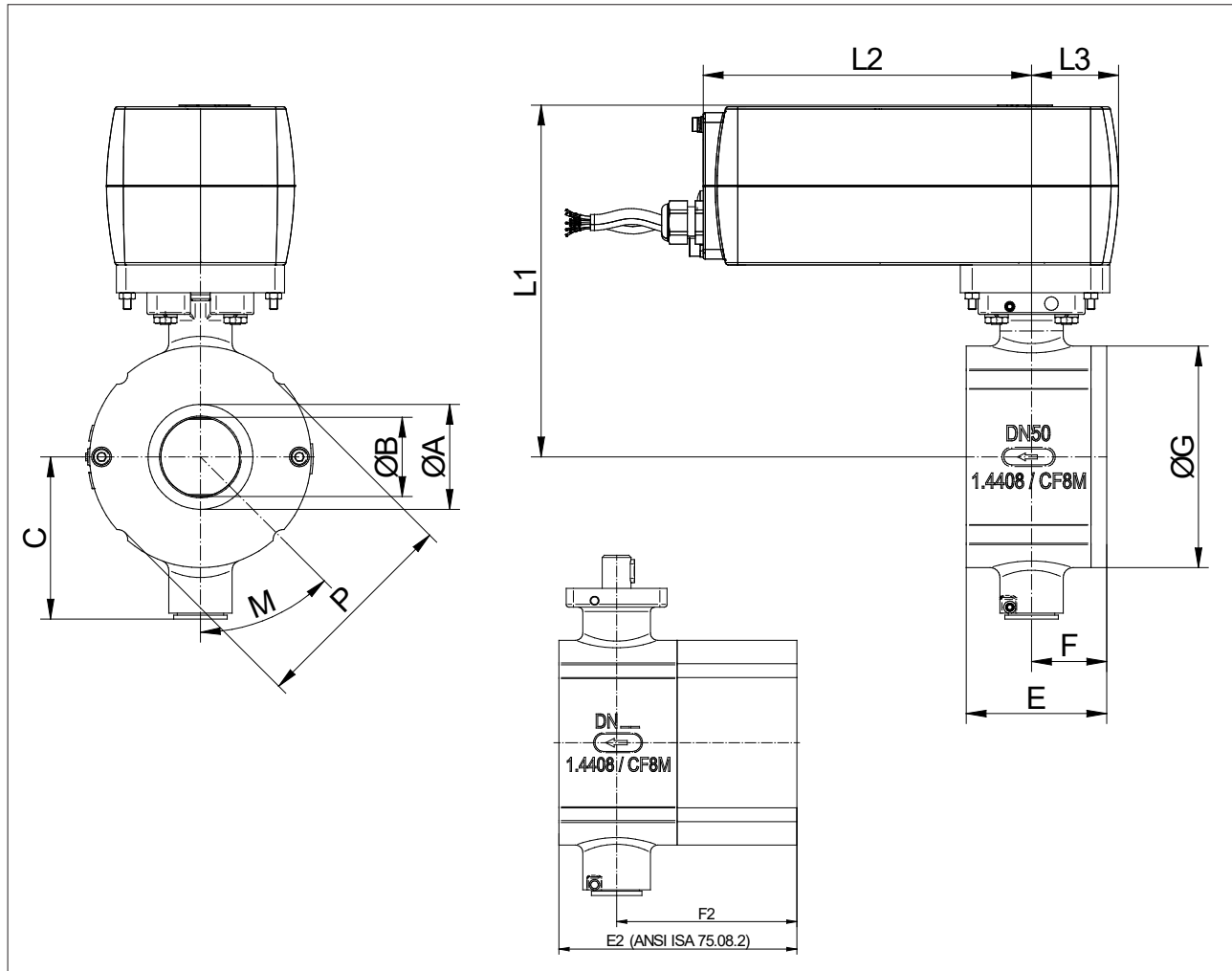
Voltage on A: Force the actuator to close
 Voltage on B: Force the actuator to open

On/Off 3-Point

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Dimensions KS1 with actuator



Size	A	B	C	E	F	G	L1	L1*	L2	L2*	L3	L3*
1"	0.98	.79 / 0.59	2.87	1.97	1.02	2.87	6.65	6.65	6.54	6.54	1.73	1.73
1 1/2"	1.61	.26 / 0.98	3.11	2.28	1.22	3.7	6.89	8.31	6.54	9.02	1.73	2.32
2"	2.09	1.57	3.23	2.8	1.5	4.41	7.01	8.43	6.54	9.02	1.73	2.32
3"	3.15	2.56	4.17	3.74	2.17	5.59	9.41	8.43	9.02	9.02	2.32	2.32
4"	3.94	3.15	4.61	4.41	2.56	6.85	9.84	-	9.02	-	2.32	-

(1: reduced Cv-value to 50%)

* with spring return function

Nominal sizes, Kvs-values and nominal pressures

Nominal size	Cv	hole inch	rotation angle nominal	max. press. Nomial	max. press. nominal ANSI
1"-50%	15	381	65°	580 psi	ANSI 300
1"	24	483	90°	580 psi	ANSI 300
1 1/2 -50%	39	635	60°	580 psi	ANSI 300
1 1/2 "	74	813	90°	580 psi	ANSI 300
2"	109	1016	90°	580 psi	ANSI 300
3"	296	1626	90°	365 psi	ANSI 150

DN	E2	F2	ANSI ISA 75.08.2
25	4	3.05	
40	4.5	3.45	
50	4.9	3.6	
80	6.5	4.9	
100	7.65	5.65	
150	9	6.05	
200	9.55	6	
250	11.75	6.8	

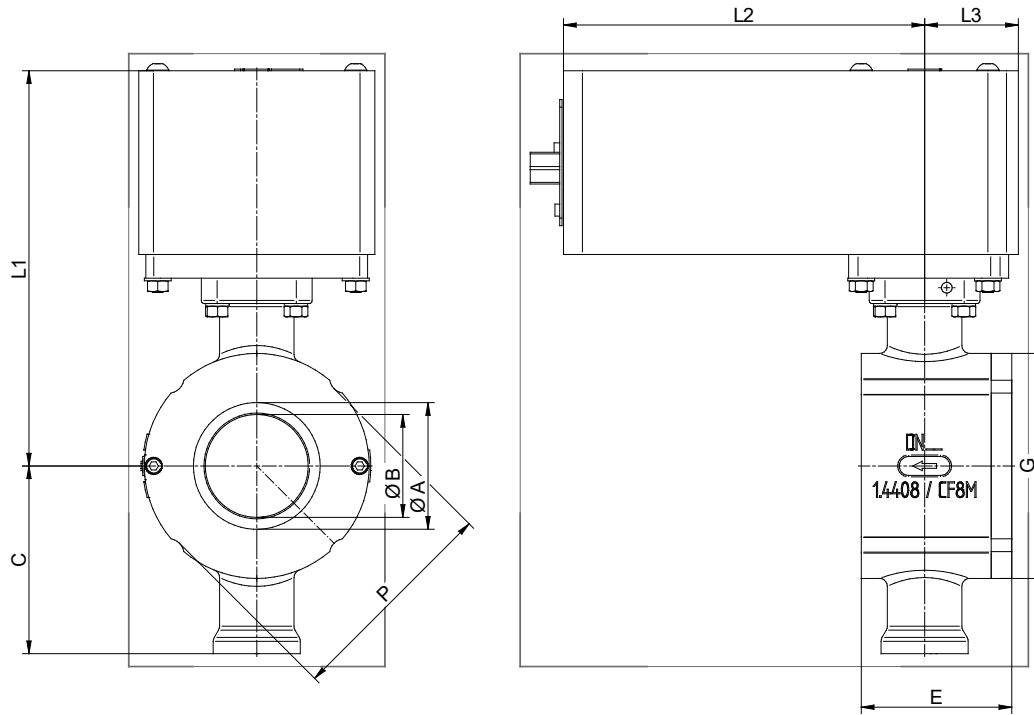
Dimension in inch

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Dimensions KS2 with actuator

Sealing of the bearing shaft with PTFE-packing



Size	A	B	C	E	F	J	L1	L1*	L2	L2*	L3	L3*
1"	0.98	0.79	3.35	1.97	1.02	0.59	7.09	7.09	6.54	6.54	1.73	1.73
1 1/2"	1.61	1.26	3.62	2.28	1.22	0.59	7.36	8.78	6.54	9.02	1.73	2.32
2"	2.09	1.57	3.74	2.8	1.5	0.59	7.48	8.9	6.54	9.02	1.73	2.32
2 1/2"	2.56	1.97	4.55	3.35	1.93	0.71	9.72	9.72	9.02	9.02	2.32	2.32
3"	3.15	2.56	4.67	3.74	2.17	0.71	9.84	9.84	9.02	9.02	2.32	2.32
4"	3.94	3.15	5.1	4.41	2.44	0.71	10.28	---	---	---	2.32	---

Size	PN					ANSI 150				ANSI 300			
	PN	G	P	M	Amount	G	P	M	Amount	G	P	M	Amount
1"	PN40	2.95	2.87	1.77	4	2.95	2.66	1.77	4	3.11	2.87	1.77	4
1 1/2"	PN40	3.78	3.7	1.77	4	3.78	3.43	1.77	4	3.9	3.7	1.77	4
2"	PN40	4.41	4.17	1.77	4	4.41	4.17	1.77	4	4.41	0	0	0
2 1/2"	PN25	5.08	0	0	0	5.08	4.92	1.77	4	5.08	0	0	0
3"	PN25	5.59	0	0	0	5.59	5.43	1.77	4	5.91	0	0	0
4"	PN25	6.85	6.46	0.89	8	6.93	0	0	0	7.17	0	0	0

Text and pictures are not binding. We reserve the right to alter the equipment.

* With spring return
Dimensions in inch