

Ball sector engine valve 4037

Ex version

DN 25 to DN 100



- DN 25 to DN 100
- Drive housing made of durable aluminum
- Excellent control behavior
- Universal supply voltage
- Easily replaceable seat ring
- Low maintenance
- Adjustable positioning times
- Degree of protection IP 66
- Manual override
- Economical and easy to install
- Integrated heating system
- Spring return on request
- Optionally with installation length according to ANSI ISA 75.08.02



Technical information valve

design	Intermediate flange design	
nominal widths	DN 25 to DN 100	
housing material	castings	1.4408 (CF8M)
	turned parts	1.4404 (316L)
bearing material	High-temperature plain bearing (iglidur Z)	
nominal pressure	DN25 - DN50	PN40 (for flanges PN 10 - PN 40), ANSI300, ANSI150
	DN80 - DN100	PN25 (for flanges PN 10 - PN 25), ANSI150
media temperature	- 60°C to + 220°C depending on the seal design	
ambient temperature	- 40°C to + 50°C	
vacuum	up to 50 mbar abs.	
curve	Almost equal percentage valve characteristic	
rangeability	100:1	
Specific leak rate	Series KS2, DN25-DN250: ISO FE-BH-CC3-SSA0-t(- 40°C/	
Shaft and housing seal	+220°C)-PN40-ISO 15848-1	

Technical information drive

supply voltage	24 ... 230VAC/DC
Degree of protection	IP66
control signal	4-20mA or 0-10V
feedback signal	4-20mA or 0-10V
EX protection (gas)	II 2G Ex d[ia] IIC T6, T5
EX protection (dust)	II 2D Ex tD [iaD] A21 IP66 T80, T95
ambient temperature	T5: -40°C to 40°C T6: -40°C to 50°C
engine	brushless DC motor
maintenance	low-maintenance engine
cable diameter	~Ø7.1mm and ~Ø7.4mm - 1m cable (may differ for Open/Close)
inverse function	Bridge between terminals 3 and 4
holding power	20 W (~16 W in heating mode)
Current consumption initialization	2 A

ATEX versions

EX protection (gas)	II 2G Ex d[ia] IIC T6, T5	Zones 1 and 2
EX protection (dust)	II 2D Ex tD [iaD] A21 IP66 T80, T95°C	Zones 21 and 22
EX protection (gas)	II3G Ex nC II T6 / II3(1)G Ex nC [ia] IIC T6	zone 2
EX protection (dust)	II3D Ex tD A22 IP66 T80°C	zone 22
Industrial applications without Ex approval	no	

Ex version

Maximum Working Pressures

DN	permissible differential pressure (delta p)									
	Seat ring PTFE			Seat ring PEEK				Seat ring stellite		
	up to 80°C bar	120°C bar	170°C bar	up to 80°C bar	120°C bar	170°C bar	220°C bar	up to 80°C bar	170°C bar	220°C bar
25-50	25	16	6	40	40	25	16	40	40	25
80-100	16	12	5	25	25	16	10	25	25	16

temperature limits

seat ring	viton		EPDM		sealing seat ring NBR		FFKM		PFA silicone	
	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]	Tmin [°C]	Tmax [°C]
PTFE	- 15	170	- 40	140	- 30	100	- 15	170	- 45	170
PEEK	- 15	200	- 40	140	- 30	100	- 15	220	- 45	220
stellite	- 15	200	- 40	140	- 30	100	- 15	220	- 45	220

leakage

seat ring	spherical sector	leak rate	
		Portion of the max. Kvs value	Class according to EN 60534-4: (IEC 60534-4)
PTFE or PEEK	polished stainless steel		VI
PTFE or PEEK	Hard-chromed stainless steel	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

DN	Kvs value reduced to					
	100%	63%	40%	25%	16%	6.3%
25	25	12.7	7.9	5.3	3.6	1.45
40	70	40	25			
50	109	65	41			
65	190					
80	300					
100	390					
125	756					
150	810					
200	1365					
250	2220					
300	3840					

Ex version

Rotation time setting / rated current

rotary switch attitude	rotation time	DN25-DN50			rotation time	DN25 (with spring return)		
		engine rotation moment	rated current			engine rotation moment	rated current	
	24V		230V		24V		230V	
0	3/7.5 sec/90°	15Nm	4.7A	0.5A	3/7.5 sec/90°	15Nm	4.7A	0.5A
1	15 sec/90°		1.45A	0.3A	15 sec/90°		1.45A	0.3A
2	30 sec/90°		0.52A	0.15A	30 sec/90°		0.52A	0.15A
3	60 sec/90°		0.4A	0.1A	60 sec/90°		0.4A	0.1A
4	120 sec/90°	30Nm	0.4A	0.1A	120 sec/90°	30Nm	0.4A	0.1A
5	7.5 sec/90°		4.7A	0.5A	7.5 sec/90°		4.7A	0.5A
6	15 sec/90°		1.45A	0.3A	15 sec/90°		1.45A	0.3A
7	30 sec/90°		0.52A	0.15A	30 sec/90°		0.52A	0.15A
8th	60 sec/90°		0.4A	0.1A	60 sec/90°		0.4A	0.1A
9	120 sec/90°		0.4A	0.1A	120 sec/90°		0.4A	0.1A

Spring return approx. 3 or 10 seconds/90°

default

rotary switch attitude	rotation time	DN40/50/80 (with spring return)			rotation time	DN80 - DN100		
		engine rotation moment	rated current			engine rotation moment	rated current	
	24V		230V		24V		230V	
0	40 sec/90°	30Nm (50Nm DN80)	2.0A	0.4A	40 sec/90°	50Nm	1.0A	0.3A
1	60 sec/90°		1.8A	0.3A	60 sec/90°		0.7A	0.2A
2	90 sec/90°		1.4A	0.15A	90 sec/90°		0.5A	0.15A
3	120 sec/90°		1.4A	0.1A	120 sec/90°		0.4A	0.1A
4	150 sec/90°		1.4A	0.1A	150 sec/90°		0.4A	0.1A
5	40 sec/90°	75 Nm	2.0A	0.4A	40 sec/90°	75 Nm	1.0A	0.3A
6	60 sec/90°		1.8A	0.3A	60 sec/90°		0.7A	0.2A
7	90 sec/90°		1.4A	0.15A	90 sec/90°		0.5A	0.15A
8th	120 sec/90°		1.4A	0.1A	120 sec/90°		0.4A	0.1A
9	150 sec/90°		1.4A	0.1A	150 sec/90°		0.4A	0.1A

Spring return approx. 20 sec/90°

default

Circuit diagram (more in the operating instructions)

regulation

Possibilities with every variable speed drive:
 Bridge I: Inversion of control and return signal

Voltage at A: drive closes
 Voltage at B: drive opens

Open/Close - 3 points

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Ex version

Order number system

Item number:

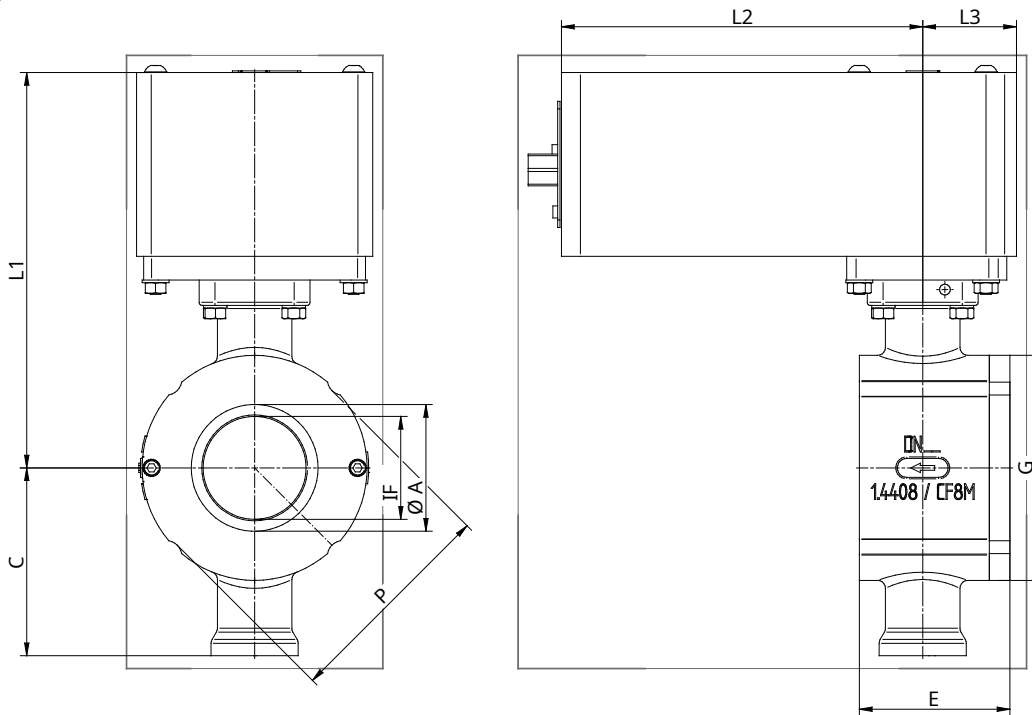
nominal size	4037/													M				Z	...	
e.g. DN 25 = 025		xxx																		
Article																				
Valve																				
repair kit																				
gasket kit																				
design																				
KS2 wafer design for flanges DIN EN 1092-1																				
KS2 wafer design for ASME B 16.5, ANSI 150 flanges																				
KS2 wafer design for flanges ASME B 16.5, ANSI 300																				
housing material																				
Stainless steel 1.4408 (CF8M) or 1.4404																				
seat combination																				
seat ring: PTFE; Ball sector: 1.4408, polished																				
seat ring: PTFE; Ball sector: 1.4408, hard chrome plated																				
seat ring: stellite; Ball sector: 1.4408, hard chrome plated and lapped																				
seat ring: PTFE; Ball sector: 1.4408, hard chrome plated and lapped																				
Seat ring: TECAPEEK; Ball sector: 1.4408, hard chrome plated																				
seal combination																				
all seals (parts 13-16) made of Viton, media temperature: -15°C to +200°C																				
all seals (parts 13-16) made of FFKM (Perlast/Kalrez), media temperature: -15°C to +220°C																				
all seals (parts 13-16) made of EPDM, media temperature: -30°C to +140°C																				
all seals (parts 13-16) made of NBR(P700), media temperature: -40°C to +100°C																				
PTFE packing; O-ring (part 115) made of VITON, media temperature: -15°C to +200°C																				
PTFE packing; O-ring (part 115) made of EPDM, media temperature: -30°C to +140°C																				
PTFE packing; O-ring (part 115) made of FFKM, media temperature: -40°C to +100°C																				
PTFE packing; O-ring (part 115) made of NBR, media temperature: -15°C to +220°C																				
PTFE packing; O-ring (part 15) made of PFA silicone, media temperature: -45°C to +220°C																				
drive																				
without adapter plate, without drive																				
without attachment kit, without drive, bearing journal connection: square																				
Electric part-turn actuator (open/close, 3-point), IP66, Type A II2G/D EEx ia IIC T6/T5 and IEC Ex,																				
Electrical part-turn actuator (control), 4-20mA and 0-10V, IP66, Type A II2G/D EEx ia IIC T6/ T5 and IEC Ex,																				
Electrical part-turn actuator (control, connected as a 3-point actuator), feedback 4-20mA and 0-10V, IP66,																				
Electric part-turn actuator (control), 4-20mA and 0-10V, IP66, type C without explosion protection, manual override,																				
drive assembly																				
default																				
motor voltage																				
24-230VAC/DC																				
safety position																				
without a security position																				
Safety position closed in the event of a power failure																				
Safety position open in the event of a power failure																				
control signal																				
Standard for drives with position electronics 4-20 mA																				
limit switch and feedback																				
Standard (4-20mA and 0-10V for variable speed drives)																				
Limit switch box (SwitchBox) mounted on drive																				
2 limit switches integrated																				
Kvs value																				
100%																				
63%																				
40%																				

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Dimensions KS2 with drive

Sealing of the bearing journal with PTFE packing



DN	A	B	C	E	f	J	L1	L1*	L2	L2*	L3	L3*
25	25	20	85	50	26	15	180	180	166	166	44	44
40	41	32	92	58	31	15	187	223	166	229	44	59
50	53	40	95	71	38	15	190	226	166	229	44	59
65	65	50	115.5	85	49	18	247	247	229	229	59	59
80	80	65	118.5	95	55	18	250	250	229	229	59	59
100	100	80	129.5	112	62	18	261	---	---	---	59	---

DN	pm					ANSI 150				ANSI 300			
	pm	G	P	M	Number	G	P	M	Number	G	P	M	Number
25	PN40	75	73	45	4	75	67.6	45	4	79	73	45	4
40	PN40	96	94	45	4	96	87	45	4	99	94	45	4
50	PN40	112	106	45	4	112	106	45	4	112	0	0	0
65	PN25	129	0	0	0	129	125	45	4	129	0	0	0
80	PN25	142	0	0	0	142	138	45	4	150	0	0	0
100	PN25	174	164	22.5	8th	176	0	0	0	182	0	0	0

* Dimensions in mm for spring return

Information and illustrations are non-binding. Subject to change.