

# Ball Sector Motor Valve 4037



ex-proof

DN 25 up to DN 100

- DN 25 up to DN 100
- Robust aluminium body of the actuator
- Excellent control characteristics
- Universal voltage supply
- Easily exchangeable seat ring
- Low maintenance
- Adjustable strokingtimes
- 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	DN 25 up to DN 100	
Body material	cast parts	1.4408 (CF8M)
	turned parts	1.4404 (316L)
Bearing material	high temperature plain bearing (Iglidur Z)	
Nominal pressure	DN 25 - DN 50	PN40 (for flanges PN 10 - PN 40), ANSI300, ANSI150
	DN 80 - DN 100	PN25 (for flanges PN 10 - PN 25), ANSI150
Fluid Temperature	-60°C up to +220°C depending on the sealings	
Ambient Temperature	-40°C up to 50°C	
Vacuum	up to 50 mbar abs.	
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-	

## 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
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 up to 40°C T6: -40°C up to 50°C
Motor	Brushless DC Motor
Maintenance	Maintenance free actuator
Diameter of cable	~Ø7,1 mm and ~Ø7,4mm - 1m 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)	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 certification	none	

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## Working pressure

DN	seat ring PTFE			maximum differential pressure (delta p)						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

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

## Kvs-Values

DN	Kvs-Wert reduced to				
	100%	63%	40%	25%	6,3%
25	21	12,7	8,4	5,25	1,45
40	70	40,32	25		
50	109	60,3			
65	149,2				
80	300				
100	390				

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## Rotary time settings / rated current

rotary switch setting	rotation time	DN25-DN50			rotation time	DN25 (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	DN40/50/80 (with spring return)			rotation time	DN80-DN100		
		actuator torque	rated current			actuator torque	rated current	
	24V		230V		24V		230V	
0	40 sec/90°	30 Nm (50Nm DN80)	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)

<p><b>Control</b></p> <p>Options within every control actuator:          Jumper I:            inverse the control and feedback signal</p> <p>Voltage on A:        Force the actuator to close          Voltage on B:        Force the actuator to open</p>	<p><b>on/off - 3 point</b></p>
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## Ordering Number System

Ordering Number:

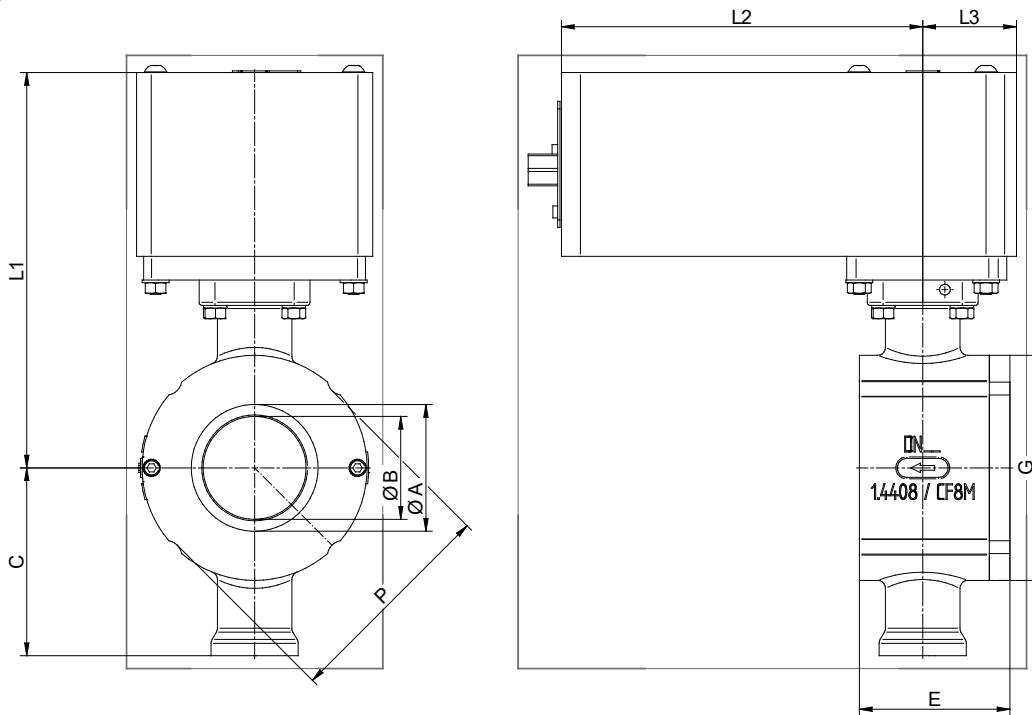
Nominal Size	4037/										M				Z	...
e.g. DN 25 = 025		xxx														
Article																
valve																V
repair-kit																R
seat kit																D
Connection																
KS2-flangeless design according DIN EN 1092-1																3
KS2-flangeless design according ASME B 16.5, ANSI 150																H
KS2-flangeless design according ASME B 16.5, ANSI 300																I
Body material																
stainless steel 1.4408 (CF8M) / 1.4404																1
Material combination																
seat ring: PTFE; ball sector: 1.4408, polished																1
seat ring: PTFE; ball sector: 1.4408, hard chrome plated																A
seat ring: Stellite; ball sector: 1.4408, hard chrome plated and lapped																B
seat ring: PTFE; ball sector: 1.4408, hard chrome plated and lapped																E
seat ring: TECAPEEK; ball sector: 1.4408, hard chrome plated																P
Seal combination																
all seals (part 13-16) from VITON, medium temperature: -15°C to +200																1
all seals (part 13-16) from FFKM (Perlast/Kalrez), medium temperature: -15°C to +220°C																A
all seals (part 13-16) from EPDM, medium temperature: -30°C to +140°C																D
all seals (part 13-16) from NBR(P700), medium temperature: -40°C to +100°C																N
Packing made of PTFE; O-Ring (Teil 115) made of VITON, fluid temperature: -15°C up to +200°C																3
Packing made of PTFE; O-Ring (Teil 115) made of EPDM, fluid temperature: -30°C up to +140°C																4
Packing made of PTFE; O-Ring (Teil 115) made of FFKM, fluid temperature: -40°C up to +100°C																5
Packing made of PTFE; O-Ring (Teil 115) made of NBR, fluid temperature: -15°C up to +220°C																6
Packing made of PTFE, O-Ring (Teil 15) made of PFA-silicone, fluid temperature: -45°C to +220°C																
Actuator																
without adapter plate, without actuator																0
without mounting kit, without actuator, connection to bearing pin: square shaft																V
electrical rotary actuator (on/off, 3-point), IP66, type A II2G/D EEx ia IIC T6/T5 and IEC Ex, manual emergency																3
electrical rotary actuator (control), 4-20mA and 0-10V, IP66, type A II2G/D EEx ia IIC T6/T5 and IEC Ex, manual																B
electrical rotary actuator (control, switched as 3-point actuator), feedback 4-20mA and 0-10V, IP66, type A II2G/D																C
electrical rotating actuator (control), 4-20mA and 0-10V, IP66, type C without Ex protection, manual emergency																R
Actuator mounting																
standard																-
Motorvoltage																
24 - 230 V AC/DC																-
Safety position:																
without safety position																-
safety position closed at power failure																3
safety position open at power failure																4
Control signal																
standard, at actuators with position electronic 4-20 mA																-
Limit switch and feedback																
standard (4-20mA and 0-10V for control actuators)																-
limit switch box (SwitchBox) mounted on actuator																1
2 integrated limit switches																2
Kvs-value																
100%																-
63%																A
40%																K

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## Dimensions KS2 with actuator

Sealing of the bearing shaft 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	PN					ANSI 150				ANSI 300			
	PN	G	P	M	Amount	G	P	M	Amount	G	P	M	Amount
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	8	176	0	0	0	182	0	0	0

\* With spring return  
Dimensions in mm

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