

Motor Valve compact 8230



GS 3 series, 1/2" up to 10"

Motor valve for control and switching of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Space saving wafer type construction
- Lowest possible weight
- Low operation noise level (quiet operation)
- Self adaption
- Operating pressures up to 580 psi
- Control of high differential pressures with small actuators
- Actuators with control function also available with safety position



Technical Information Valve

Design	ANSI flange wafer (self-aligning)		
Nominal Sizes	1/2" - 10"		
Nominal pressure acc. DIN 2401 for flanges with facing type B	580 psi (fits also to 145-365psi)	1/2" - 6"	
	235 psi	8" - 10"	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150	1/2" - 10"	
	ANSI 300	1/2" - 6"	
Nominal pressure acc. JIS for „raiced face“ flanges	10K	1/2" - 2"	
	20K	1/2" - 1 1/2"	
Fluid Temperature	Versions from -76°F up to +662°F		
Leakage Rate (% of Kvs-value)	sliding unit carbon-stainless steel coated	sliding unit SFC	sliding unit STN2
	< 0,0001	< 0,0005	< 0,001
Packing leakage	tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440		

Cv-values see data sheet 8001

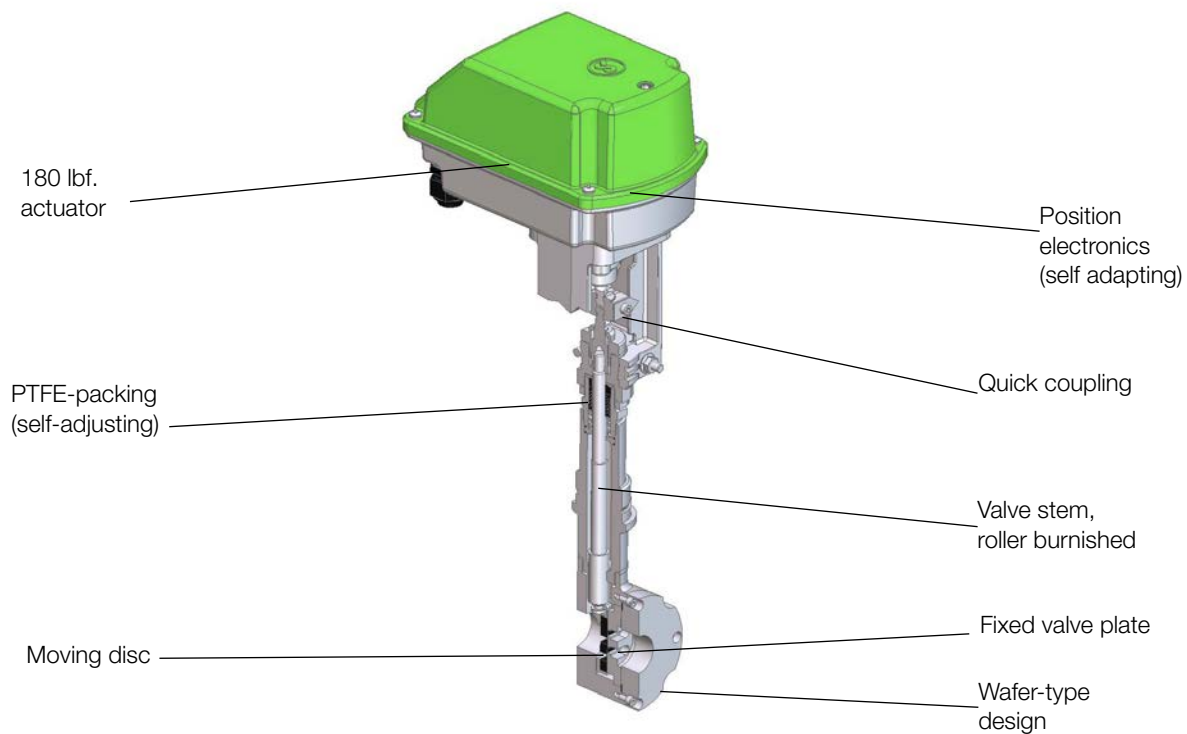
Fluid temperature

Rating	PN40	PN 16	PN 100	ANSI 150	ANSI 300	ANSI 600
Body material cpl. stainless steel						
Tmin [°F]	-76	-76	-76	-20	-20	-20
Tmax [°F]	662	662	662	662	662	662
Body material cpl. carbon steel						
Tmin [°F]	-76	-76	14	-4	-4	14
Tmax [°F]	572	572	572	572	572	572
Body material carbon steel with stainless steel body cover						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662

Motor Valve compact 8230

Materials

Body	Carbon steel ASTM A572-50, A216	Stainless steel 316Ti /318 or 316L /CF8M	
Bodycover	Carbon steel ASTM A572-50	Stainless steel 316Ti or 316L	
Packing	PTFE, carbon filled (spring SST 301)		
Valve stem	Stainless steel 316Ti, roller burnished		
Bellows	Stainless steel 316Ti		
Fixed plate	Stainless steel 316Ti, plated		STN2-disc
Sliding disc	Standard: special carbon material	SFC-disc	STN2-disc
Coupling ring for disc	Stainless steel 316Nb		



Technical Information CA-Actuators

Function	Control				On/Off	
	CA24C	CA260C	CA24C-R	CA260C-R	CA24	CA260
Motor type	CA24C	CA260C	CA24C-R	CA260C-R	CA24	CA260
Mains connection	24V AC/DC	90-260V AC	24V AC/DC	90-260V AC	24V AC/DC	90-260V AC
Set point range	(0)2-10V / (0)4-20mA*				3-point**	
Feedback	(0)2-10V / (0)4-20mA				optional	
Dead band	±0.6% of the entire stroke				-	
Repeatability	±0.3% of the entire stroke				-	
Limit switch	2				optional	
Potentiometer feedback	-				optional	
Max. switching capacity	24V AC/DC 200 mA				250V AC/DC 1A	
Actuating speed	38.1 / 50.8 / 76.2 s/inch (Standard: 70.8 s/inch)				50.8 or 76.2 s/inch (Standard: 76.2 s/inch)	
Safety functions	Monitoring of tensile force, set point, temperature of the electronics, etc.				Tensile force monitoring	
Diagnostic functions	Storage of motor and total operating time, temperature and directional classes, etc.				-	
Fail Safe position	-	-	freely adjustable		-	
Load	500 Ω for current set point / 95 kΩ for voltage set point				-	
Max. input	13 W	12 W	13 W	12 W	13 W	12 W
Input heating resistor	10 W					
Starting current heating resistor	6 A	2,5 A	6 A	2,5 A	6 A	2,5 A
Actuating power	800 N					
Protection class (EN 60529)	IP 65					
Adm. Ambient temperature	14°F to +140°F					
Duty cycle	100%					

*: for control with volt-signal split range adjustments are possible

**: minimum switch on time 200ms

Wiring diagrams of the actuators can be found in the manual.

Motor Stroking Times for CA-actuators

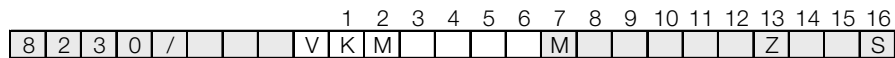
Setting	Stroking times in seconds		
	1/2" - 1 1/2"	2" - 3"	4" - 10"
38.1 s/inch	9.5	12.5	13
50.8 s/inch	12.5	16.5	17
76.2 s/inch	19	25	26

Admissible Pressures

Nominal Size	maximum differential pressure [psi]												
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"
Unit carbon/SFC-stainless steel	741	741	725	593	450	294	248	158	100	68	51	29	19
STN 2-unit	708	544	408	303	207	125	102	61	38	26	19	-	-

	Pressure limits ANSI and DIN in psi			
	ANSI150	ANSI 300	PN16	PN40
P max. carbon steel	284	741	232	580
P max. stainless steel	276	719		

Ordering Number System



1 - 6 : Please quote all 6 sections.
 7 - 16: Quote only if required.

Symbol: "V": Valve
 "R": Repair kit (sealings)

1. Motor design	2. Function	3. Connection	4. Body material	5. Safety position	6. Motor	7. Special versions	8. Stem sealing
K compact actuator	M motor control valve type 8230	E GS3 flangeless design acc. ANSI 150 F GS3 flangeless design acc. ANSI 300 G GS3 flangeless design acc. DIN, 145-580 psi	0 carbon steel ASTM A572-50/ ASTM A216 1 stainless steel 316Ti / 318 or 316L / CF8M	- without safety position 2 Fail-Safe: normally closed at power failure 3 Fail-Safe: normally open at power failure 4 Fail Safe: position acc. customer request	C Control actuator CA24C, 24V AC/DC, with position electronic, standard adjustment: control signal 4-20mA, feedback 4-20mA, 2 limit switch D Control Actuator CA260C, 90-260V 50/60Hz, with position electronic, Standard adjustment 4-20mA, feedback 4-20mA, 2 limit switch E On-Of (3-point) actuator CA24, 24V AC/DC F On-Off (3-point) actuator CA260, 90-260V, 50/60Hz	M to state if some of sections 8 - 15 are quoted	- PTFE-packing self-adjusting (standard) 1 stainless steel bellow 316Ti
9. Moving disc	10. Fixed disc	11. Cv-values	12. Flow characteristic	13. Accessories	14. Set point signal	15. Stroking times	16. Special versions
- carbon material 9 STN2/STN3 S SFC	- stainless steel/ Stellite 1 STN2-plate (only in combination with pos.*9) 3 STN3-plate (only in combination with pos.*9)	- 100% (stand.) A red. to 63% 1 red. to 40% B red. to 25% 2 red. to 16% C red. to 10% 3 red. to 6,3% 4 red. to 2,5% 5 red. to 1% 6 red. to 20% 7 red. to 12% 8 red. to 2% 9 red. to 0.4%	- linear 1 equal percentage	Z accessories (pos.14 ff.)	- standard 2-10V or 4-20 mA signal opens	- standard: control actuators: 2 s/0.04 inch On-off actuators: 3 s /0.04 inch 4 3 s/0.04 inch CA-actuators only 5 1.5 s/0.04 inch CA-actuators only	

Ordering example 8230/050VKME10C
 GS-Motor Valve compact type 8230, 2", flangeless design ANSI 150, stainless steel body, spring closes, control actuator CA24C, 24V AC/DC, control electronics 4-20 mA, stroke feedback 4-20 mA, 2 limit switches, linear characteristic, Cv-value 100 %

Application limitations for GS3 valves in stainless steel

These pressure must not be exceeded for GS-valves from the GS3-series made of stainless steel, even though the actuator power might allow it.

ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 5"	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0
6"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	235,0	235,0	235,0	215,0	200,0	170,0	140,0	120,0
8"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	-	-	-	-	-	-	-	-
10"	150,0	150,0	150,0	145,0	135,0	120,0	105,0	100,0	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 2 1/2"	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0
3"	695,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	530,0	530,0	530,0	505,0	480,0	390,0	320,0	275,0
4"	480,0	480,0	480,0	480,0	480,0	480,0	460,0	440,0	480,0	480,0	480,0	460,0	435,0	355,0	290,0	250,0
5"	335,0	335,0	335,0	335,0	335,0	335,0	335,0	335,0	320,0	320,0	320,0	305,0	290,0	235,0	190,0	165,0
6"	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	225,0	210,0	170,0	140,0	120,0

Limitation for SFC-sliding discs: 570°F

PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated							Paarung: STN 2						
	maximum pressures for GS3-valves in stainless steel							maximum pressures for GS3-valves in stainless steel						
	210°F	300°F	390°F	480°F	570°F	660°F		210°F	300°F	390°F	480°F	570°F	660°F	
1/2"-1 1/4"	580	580	580	580	580	580		580	580	580	580	580	580	
1 1/2"	580	580	580	580	580	580		580	580	580	580	580	535	
2"	580	580	580	580	580	580		580	580	580	580	580	580	
2 1/2"	580	580	580	580	580	580		580	580	580	580	535	465	
3"	580	580	580	580	580	580		520	495	480	375	320	275	
4"	480	480	480	480	480	480		465	450	435	350	290	245	
5"	335	335	335	335	335	335		305	305	275	230	190	160	
6"	230	230	230	230	230	230		220	220	205	160	130	115	
8" (only PN16)	230	230	220	190	175	160		-	-	-	-	-	-	
10" (only PN16)	145	130	130	115	100	85		-	-	-	-	-	-	

Limitation for SFC-sliding discs: 570°F

Application limitations for GS3 valves in carbon steel

These pressure must not be exceeded for GS-valves from the GS3-series made of carbon steel, even though the actuator power might allow it.

ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-5"	285	280	255	230	200	175	150	120	285	280	255	230	200	175	150	120
6"	230	230	230	230	200	175	150	120	235	235	235	225	200	170	140	115
8"	230	230	230	230	200	175	150	120	-	-	-	-	-	-	-	-
10"	150	150	150	145	135	120	105	87	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-2"	740	725	675	655	635	610	285	580	740	725	675	655	635	610	285	545
2 1/2"	740	725	675	655	635	610	285	580	605	605	605	575	545	485	285	470
3"	695	695	675	655	635	610	285	580	530	530	530	505	480	390	285	275
4"	480	480	480	480	480	480	285	475	480	480	480	460	435	355	285	245
5"	335	335	335	335	335	335	285	330	320	320	320	305	290	235	190	155
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	140	115

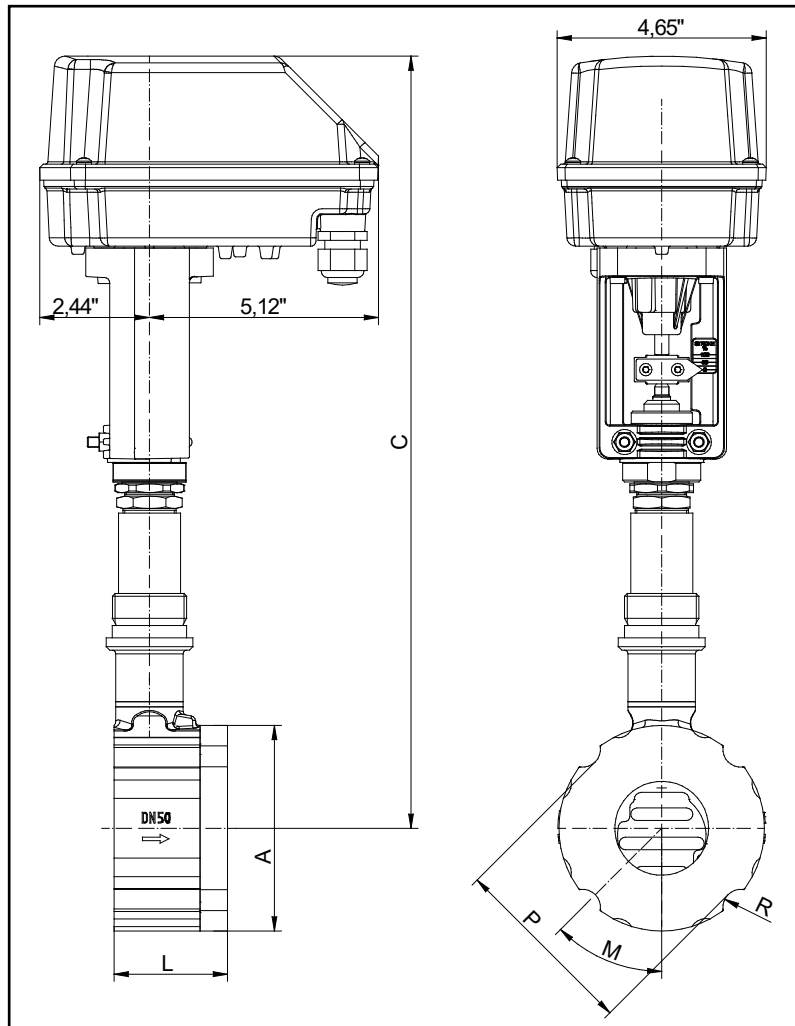
Limitation for SFC-sliding discs: 570°F

PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated							Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel							max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F		210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 2"	580	580	580	580	580	580		580	580	580	580	580	580
2 1/2"	580	580	580	580	580	580		580	580	580	580	535	460
3"	580	580	580	580	580	580		520	495	480	375	320	275
4"	480	480	480	480	480	475		480	450	435	350	290	245
5"	335	335	335	335	335	330		320	305	275	230	190	155
6"	230	230	230	230	230	230		230	220	205	160	130	115
8" (only 235 psi)	230	230	220	190	175	155		-	-	-	-	-	-
10" (only 235 psi)	145	130	130	115	100	87		-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

Dimensions and Weights of CA-actuators



DN	A	C	L	Stroke	Weight lbs
1/2"	2.52	16.14	2.2	0.24	9.3
3/4"	2.83	16.34	2.2	0.24	9.7
1"	3.23	16.54	2.2	0.24	10.4
1 1/4"	3.5	16.73	2.2	0.24	10.8
1 1/2"	3.9	16.93	2.2	0.24	11.5
2"	4.57	17.32	2.52	0.31	14.8
2 1/2"	5.43	17.6	2.68	0.31	18.1
3"	6.02	17.99	2.76	0.31	20.7
4"	7.24	18.5	2.95	0.33	27.8
5"	8.35	19.09	3.15	0.33	32.8

Dimensions in inch

Motor Valve compact 8230-GS3



Flow Coefficients - Cv-values

Ordering code		-	A	1	B	6	2	7	C	3	4	8	5	9
Size	Charact.	100 %	63 %	40 %	25 %	20%	16 %	12 %	10 %	6,3 %	2,5 %	2 %	1 %	0,4%
1/2"	(mod.) linear	4.6	3	2	1.6	-	0.82	0.57	0.51	0.3	0.16	0.09	0.05	-
	eq. perc.	2	-	1.3	-	-	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	-	-	-	-	-	-	-	-	-	-	-
1"	(mod.) linear	13	7.4	4.6	-	-	1.9	-	1.08	0.72	0.3	-	0.16	0.05
	eq. perc.	5.8	-	2.8	-	1.3	-	-	-	-	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-								
	eq. perc.	9.3	-	-	-	-								
1 1/2"	(mod.) lin.	30	19	13	8.1	-								
	eq. perc.	13	9.9	-	3.2	-								
2"	(mod.) linear	52	32	23	14	12								
	eq. perc.	22	14	-	-	-								
2 1/2"	(mod.) linear	60	41	-	17									
	eq. perc.	35	-	-	9.3									
3"	(mod.) linear	107	67	46										
	eq.perc.	56	41	-										
4"	(mod.) linear	179	110	72										
	eq.perc.	89	56	-										
5"	(mod.) linear	275	-	110										
	eq.perc.	135	-	-										
6"	(mod.) linear	392	246	-										
	eq.perc.	171	104	-										
8"	(mod.) linear	650	408	-										
	eq.perc.	-	-	-										
10"	(mod.) linear	1056												
	eq.perc.	-												