

Sliding Gate Motor Valve 8230



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

Sliding gate 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
- Meets the requirements of TA-Luft 2021

Technical Information

Body design	ANSI flange wafer (self-aligning) - for flanges acc. ASME B16.5 RF or DIN EN 1092-1 Form B - with threaded connection (only 580 psi in stainless steel; 1/2" up to 2")		
Nominal Sizes	1/2" - 10"		
Nominal pressure acc. DIN 2401 for flanges with facing type B	580 psi (fits also to 145-365psi) 235 psi	1/2" - 6" 8" - 10"	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150 ANSI 300	1/2" - 10" 1/2" - 6"	
Nominal pressure acc. JIS for „raised face“ flanges	10K 20K	1/2" - 2" 1/2" - 1 1/2"	
Flange gaskets (customer side)	ANSI B16.21 or DIN EN 1514-1 in the respective nominal pressure rating		
Fluid Temperature	Versions from -76°F up to +662°F		
Leakage	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2
% of Kvs	< 0,0001	< 0,0005	< 0,001
IEC 60534-4	IV-S1	IV-S1	IV
EN 12266-1	E	F	F
Specific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1		

* With DN15 with reduction of less than 25%, different leakage rates possible.
K_{vs} -values see data sheet 8001.

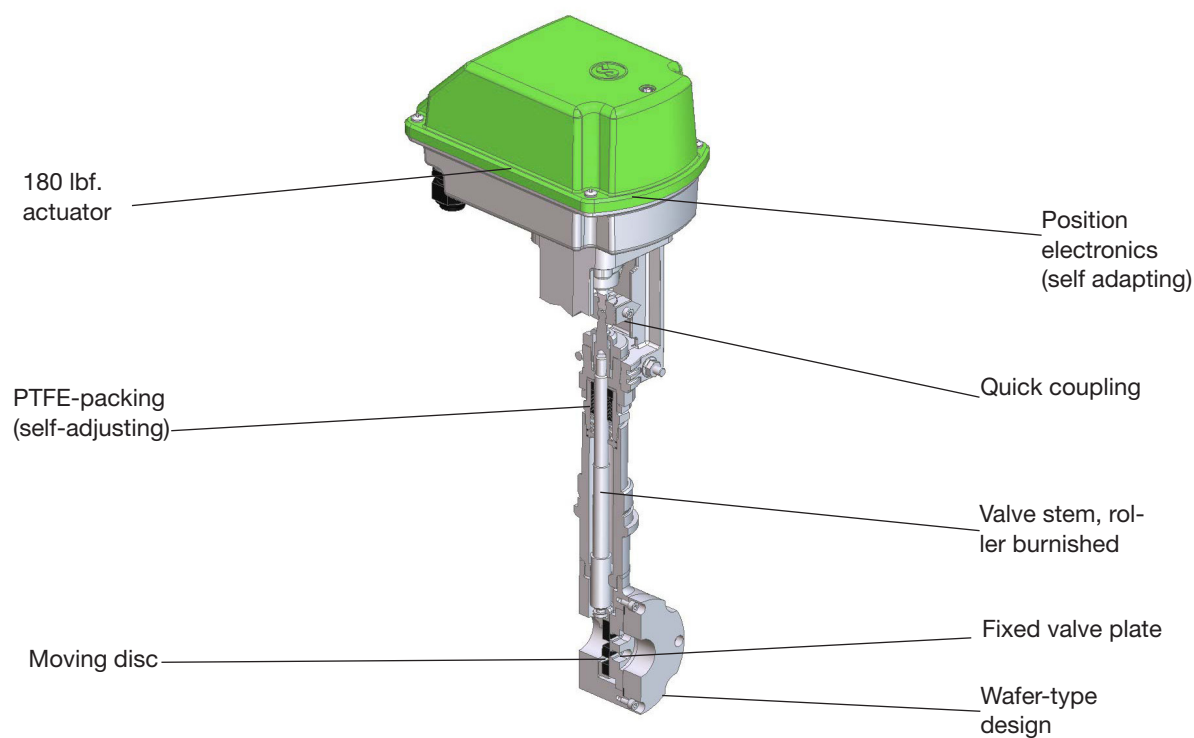
Fluid temperature

Rating	PN16	PN 40	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 carbon steel with stainless steel body cover						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662



Materials

Body	Stainless steel CF8M	Carbon steel WCB
Bodycover	Stainless steel 316 L	
Packing	PTFE (Carbon filled), spring SST 301	
Actuating stem	Stainless steel 316 Ti, roller burnished	
Bellows	Stainless steel 316 Ti	
Fixed disc	Stainless steel 316 Ti, coated	STN2-disc
Sliding disc	Special carbon material	STN2-disc
Guide ring for sliding disc	Stainless steel 316 Ti	



Technical Information CA-Actuators

Function	Control				On/Off	
Motor type	CA24C	CA260C	CA24C-R	CA260C-R	CA24	CA260
Mains connection	24 V AC/DC	100-240 V AC	24 V AC/DC	100-240 V AC	24 V AC/DC	100-240 V AC
Set point range	(0)2-10 V / (0)4-20 mA				3-point**	
Mains frequency	50/60 Hz				50/60 Hz	
Feedback	(0)2-10 V / (0)4-20 mA				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	24 V AC/DC 200 mA				250 V AC/DC 1 A	
Actuating speed	38.1 / 50.8 / 76.2 s/inch (Standard: 50.8 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. power consumption	13 W	12 W	13 W	12 W	13 W	12 W
Input heating resistor	10 W					
Starting current	6 A	2.5 A	6 A	2.5 A	6 A	2.5 A
Actuating power	180 lbf					
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 on-time 200 ms

*** Dustproof, protected against water jets from any angle

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

Motor Stroking Times for CA-actuators

Stroking times in seconds			
Setting	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	10	6

	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		

Diagram illustrating the structure of the alphanumeric code (16 characters):

- Type:** Characters 1-4 (8, 2, 3, 0)
- Size:** Characters 5-8 (/, /, /, /)
- Symbol:** Characters 9-16 (V, K, M, /, /, /, /, M, /, /, /, /, Z, /, /, S)

Legend:

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

1.	Motor design	2.	Function	3.	Connection	4.	Body material	5.	Safety position	6.	Motor
K	compact actuator	M	motor control valve type 8230	E	GS3 flangeless design acc. ANSI 150	0	Carbon-Steel ASTM A216 WCB	-	without safety position	C	Control actuator CA24C, 24V AC/DC, with position electronic, standard adjustment: control signal 4-20mA, feedback 4-20mA, 2 limit switch
				F	GS3 flangeless design acc. ANSI 300	1	Stainless Steel CF8M	2	Fail-Safe: normally closed at power failure	D	Control Actuator CA260C 100-240V, 50/60Hz with position electronic, Standard adjustment 4-20mA, feedback 4-20mA, 2 limit switch
				G	GS3 flangeless design acc. DIN, 145-580 psi			3	Fail-Safe: normally open at power failure		
				R	GS3 version with inner thread acc. ISO 228-1 (G-thread), pressure rating 580 psi			4	Fail Safe: position acc. customer request	E	On-Of (3-point) actuator CA24, 24V AC/DC
				U	GS3 version with inner NPT thread acc. ANSI B 1.20.1, pressure rating 580 psi					F	On-Off (3-point) actuator CA260, 100-240V, 50/60Hz
7.	Special versions	8.	Stem sealing	9.	Moving disc	10.	Fixed disc	11.	Cv-values	12.	Flow characteristic
M	to state if some of sections 8 - 15 are quoted	-	PTFE-packing self-adjusting (standard)	-	carbon material	-	stainless steel/Stellite	-	100% (stand.)	-	linear
		1	stainless steel bellow 316Ti	9	STN2/STN3	1	STN2-plate (only in combination with pos.“9“)	A	red. to 63%	1	equal
				S	SFC	3	STN3-plate (only in combination with pos.“9“)	B	red. to 25%		percentage
								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%		
13.	Accessories	14.	Set point signal	15.	Stroking times	16.	Special versions				
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						

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 feed back 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	265	235	215	200	175	150	120	275	265	235	215	200	175	150	120
6"	230	230	230	215	200	175	150	120	235	235	235	215	200	170	140	120
8"	230	230	230	215	200	175	150	120	150	145	120	110	100	80	65	55
10"	150	150	150	145	135	120	105	100	85	85	85	80	75	60	50	40

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	695	610	560	520	485	460	440	720	695	610	560	520	485	460	440
3"	695	695	610	560	520	485	460	440	530	530	530	505	480	390	320	275
4"	480	480	480	480	480	480	460	440	480	480	480	460	435	355	290	250
5"	335	335	335	335	335	335	335	335	320	320	320	305	290	235	190	165
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	140	120
8"	230	230	230	145	135	120	105	100	230	230	220	200	180	155	140	130

Limitation for SFC-sliding discs: 570°F

ANSI600

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" - 3/4"	1440	1395	1225	1115	1035	970	915	880	1440	1395	1225	1115	1035	970	915	880
1"	1275	1275	1225	1115	1015	925	830	785	1275	1275	1225	1115	1015	925	830	785
1 1/4"	1440	1395	1225	1115	1035	970	915	880	1440	1395	1225	1115	1035	970	915	875
1 1/2"	1275	1275	1225	1115	1015	925	830	785	1050	1050	1050	1000	950	770	630	545
2"	1440	1395	1225	1115	1035	970	915	880	1125	1125	1125	1070	1020	825	675	585
2 1/2"	1160	1160	1160	1115	1035	970	915	880	905	905	605	865	820	665	545	470
3"	695	695	695	695	695	695	695	645	530	530	530	505	480	390	320	275

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		120	110	100	80	65	55
10" (only PN16)	145	130	130	115	100	85		85	80	75	60	50	40

Limitation for SFC-sliding discs: 570°F

PN100

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"	1450	1450	1450	1350	1220	1145		1450	1450	1450	1350	1220	1145
3/4"	1450	1450	1290	1175	1060	985		1450	1450	1290	1175	1060	985
1"	1275	1175	1015	915	825	785		1275	1175	1015	915	825	785
1 1/4"	1450	1350	1160	1060	945	900		1450	1350	1160	1060	945	870
1 1/2"	1275	1175	1015	915	825	785		1045	1000	945	770	625	535
2"	1450	1450	1450	1450	1450	1365		1115	1060	1015	810	665	580
2 1/2"	1160	1160	1160	1145	1030	970		900	855	810	655	535	465
3"	695	695	695	695	695	640		520	495	480	375	320	275

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	150	145	120	110	100	80	65	55
10"	150	150	150	145	135	120	105	87	85	85	85	80	75	60	50	40

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	565	535	740	725	675	655	635	610	565	535
2 1/2"	740	725	675	655	635	610	565	535	605	605	605	575	545	485	550	470
3"	695	695	675	655	635	610	565	535	530	530	530	505	480	390	319	275
4"	480	480	480	480	480	480	475	475	480	480	480	460	435	355	290	245
5"	335	335	335	335	335	335	330	330	320	320	320	305	290	235	191	155
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	141	115
8"	230	230	220	200	180	155	140	130	150	145	120	110	100	65	65	55

Limitation for SFC-sliding discs: 570°F

ANSI600

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"-1"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1155	1085
1 1/4"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1010	870
1 1/2"	1450	1450	1350	1310	1270	1215	1155	1085	1050	1050	1050	1000	950	770	630	535
2"	1450	1450	1350	1310	1270	1215	1155	1085	1125	1125	1125	1070	1020	825	675	580
2 1/2"	1160	1160	1160	1160	1160	1160	1155	1085	905	905	905	865	820	665	545	460
3"	695	695	695	695	695	695	695	635	530	530	530	535	480	390	320	275

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" (max 365 psi)	230	230	220	190	175	155		120	110	100	80	65	55	
10" (max 365 psi)	145	130	130	115	100	87		85	80	75	60	50	40	

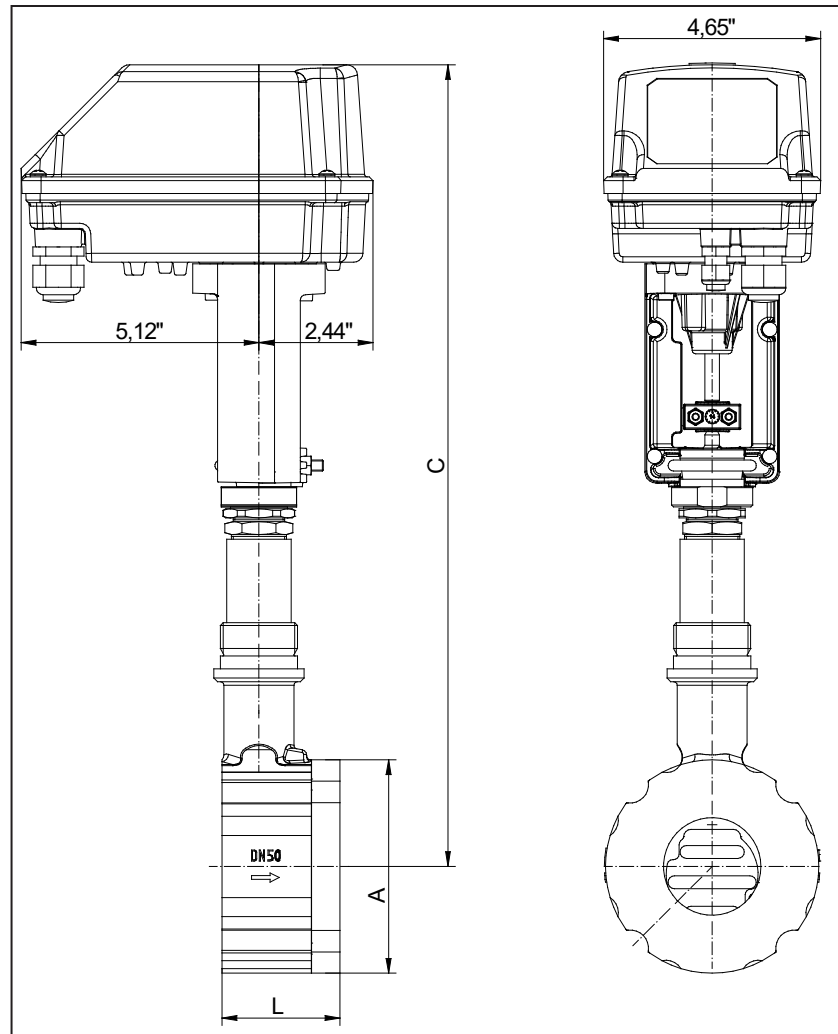
Limitation for SFC-sliding discs: 570°F

PN100

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" - 3/4"	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
1"	1450	1450	1450	1450	1365	1260	1450	1450	1450	1450	1365	1260
1 1/4"	1450	1450	1450	1450	1450	1435	1450	1450	1450	1220	1000	870
1 1/2"	1450	1450	1450	1450	1450	1365	1045	1000	945	770	625	535
2"	1450	1450	1450	1450	1450	1360	1115	1060	1015	810	665	580
2 1/2"	1160	1160	1160	1160	1160	1100	900	855	810	655	535	460
3"	695	695	695	695	695	635	520	495	480	375	320	275

Limitation for SFC-sliding discs: 570°F

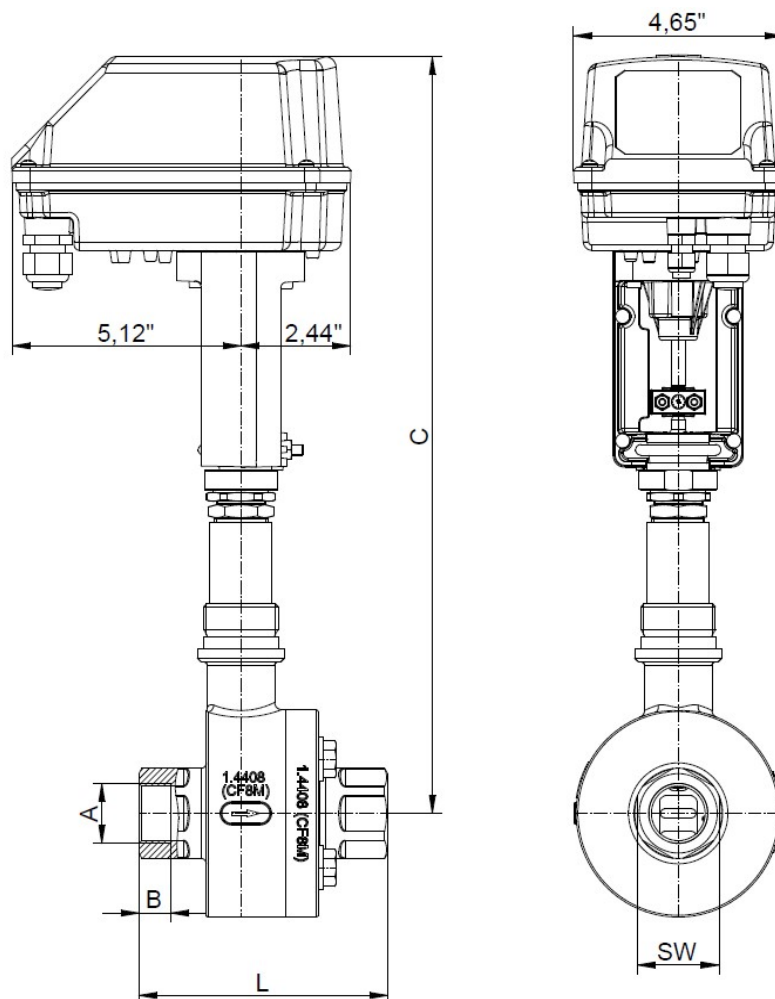
Dimensions and Weights of CA-actuators wafer-type construction



Size	A	C	L	Stroke	Weight lbs
1/2"	2.52	15.16	2.2	0.24	8.4
3/4"	2.83	15.35	2.2	0.24	8.8
1"	3.23	15.55	2.2	0.24	9.5
1 1/4"	3.39	15.75	2.2	0.24	9.9
1 1/2"	3.9	15.94	2.2	0.24	10.6
2"	4.57	16.34	2.52	0.31	13.9
2 1/2"	5.43	16.61	2.68	0.31	17.2
3"	6.02	17.01	2.76	0.31	19.8
4"	7.24	17.52	2.95	0.33	26.9
5"	8.35	18.11	3.15	0.33	32
6"	9.53	18.5	3.15	0.33	40.3
8"	11.89	19.61	3.66	0.33	77.6
10"	14.17	20.63	3.78	0.33	115

Dimensions in inch

Dimensions and Weights of CA-actuators with threaded connections



Size	A (G/NPT)	B		C	L	SW	Stroke	Weight lbs
		G	NPT					
1/2"	1/2"	0,6	0,54	16,14	5,0	1,2	0,25	14,3
3/4"	3/4"	0,6	0,56	16,34	5,0	1,5	0,25	15,4
1"	1"	0,7	0,66	16,54	5,5	1,8	0,25	21,8
1 1/4"	1 1/4"	0,7	0,68	16,73	5,5	2,2	0,25	23,6
1 1/2"	1 1/2"	0,7	0,68	16,93	6,0	2,5	0,25	26,2
2"	2"	0,7	0,70	17,32	6,0	2,9	0,3	32,0

Dimensions in inch

Sliding Gate Motor Valve 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	0.021
	eq. perc.	2	-	1.3	-	0.4	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	1.7	-	-	-	-	-	-	-	-	-	-
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	-	-	-	0.41	-	-	-	-
1	(mod.) linear	19	12	-	-	-	-							
1/4"	eq. perc.	9.3	5.45	-	-	-	-							
1	(mod.) lin.	30	19	13	8.1	-	-							
1/2"	eq. perc.	13	9.9	-	3.2	-	-							
2"	(mod.) linear	52	32	23	14	12	-							
	eq. perc.	22	14	-	-	-	3.5							
2	(mod.) linear	60	41	-	17									
1/2"	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.	329	-	-										
10"	(mod.) linear	1056	667											
	eq.perc.	-												