

## Series GS3 - 1/2 up to 8

**Fast and high resolution sliding gate motor valve for control and switching of neutral through to aggressive media.**

- Flange connection by ASME B16.5 in ANSI150 or ANSI300
- Construction is consistent with the ASME B16.34, API RP 553, API 598, ASME B31.1 (Power Piping) and ASME B31.3 (Process Piping)
- Control of high differential pressures with small actuators
- Fast stroking speed
- Small dead band
- Motor drive with metal body
- High KVs-Values



### Technical data

Design	flange design acc. EN 1092-1 Form B or ASME B16.5 RF		
Nominal size	1/2" up to 8"	Class 150 Class 300	
Media temperature	Stainless steel housing Carbon steel housing	-76°F up to +662°F -20°F up to +662°F	
Rangeability	40 : 1 linear / 80:1 equal percentage		
Leakage	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2
% of Kvs IEC 60534-4 EN 12266-1	< 0,0001 IV-S1 D	< 0,0005 IV-S1 E	< 0,001 IV E
Specific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1		

\* Please note the application limits of the positioner  
Kvs value please refer data sheet 8001

### Options & Accessories

- Metall bellow
- Bluetooth communication module BT-1

### Material standard version

	Stainless steel version			
Body	Stainless steel, 1.4408 / CF8M			
End piece	Stainless steel, 1.4408 / CF8M			
Valve stem	Stainless steel, 1.4571/ 316Ti			
Coupling ring	Stainless steel, 1.4581			
Tube for packing	Stainless steel 1.4408 / CF8M			
Packing	PTFE filled with carbon (spring 1.4310)			
Seal for body	Graphite with stainless steel inlay			
Fixed disc	Coated with stainless steel		STN2-valve plate	STN3-valve plate
Moving plate	Carbon material	SFC-valve plate (max. +300°C)	STN2-valve plate	STN3-valve plate

	Carbon steel version			
Body	Carbon steel, 1.0619 / WCC			
End piece	Carbon steel, 1.0619 / WCC			
Valve stem	Stainless steel, 1.4571/ 316Ti			
Coupling ring	Stainless steel, 1.4581			
Tube for packing	Stainless steel, 1.4408 / CF8M			
Packing	PTFE filled with carbon (spring 1.4310)			
Seal for body	Graphite with stainless steel inlay			
Fixed disc	Coated with stainless steel		STN2-valve plate	STN3-valve plate
Moving plate	Carbon material	SFC-valve plate (max. +300°C)	STN2-valve plate	STN3-valve plate

## Technical data of actuator

Driving force	450 lbf / 1100 lbf		
Power connections	24 V AC/DC 100 - 240 V 50/60Hz		
Ambient temperature	Standard:	+14°F up to +140°F	
	Low temperature version:	-40°F up to +140°F	
Storage Temperature	Standard:	-22°F up to +176°F (+140°F with Fail-Safe protection)	
	Low temperature version:	-40°F up to +176°F (+140°F with Fail-Safe protection)	
Mounting position	choice horizontal or vertical actuator only		
Protection class (EN 60529)	IP 67		
Max. power consumption at 24V AC/DC-operation:	40 Watt		
Nominal power consumption during mains operation	Mains voltage 230V:	P=40W S=67,8VA I=295mA	cosφ=0.59
	Mains voltage 115V:	P=40W S=58,8VA I=511mA	cosφ=0.68
Dead band	±0.2% at min. 0.24" stroke		
Repeat accuracy	±0.1% at min. 0.24" stroke		
Stroking speed	450 lbf-version:	19 s/inch up to 6350 s/inch (standard 38 s/inch)	
	1100 lbf-version:	51 s/inch up to 6350 s/inch (standard 38 s/inch)	
Stroking speed of the Fail-Safe protection	450 lbf-version:	19 s/inch up to 102 s/inch (standard 38 s/inch)	
	1100 lbf-version:	51 s/inch up to 102 s/inch (standard 38 s/inch)	
Set point range	adjustable 0(4) - 20 mA, 0(2) - 10 V optional binary input signal (24V DC)		
Feed back	adjustable 0(4) - 20 mA, 0(2) - 10 V		
cycles (Fail-Safe)	500000		
life-time (Fail-Safe)	10 years		
duty cycle	100%		
Self Monitoring	monitoring of the driving power, set point, actuator temperature, temperature of the electronic etc.		
Diagnostic function	storage of motor and total service life, temperature- and way classes		
Valve adaptation	automatic stroke adjustment to suit valve limits		
additional inputs	binary input		
additional outputs	2 alarm outputs		
Electrical connection	Power supply M20x1.5 (optional NPT 1/2") Signal/position feedback 2x M16x1.5		

## Positioning time

DN	Stroke	Stroking time (sec.) for the complete stroke at a stroking speed of				
		19 s/inch	25 s/inch	38 s/inch	51 s/inch	102 s/inch
1/2" - 1 1/2"	0,25	4,7	6,3	9,4	12,5	25,0
2" - 3"	0,32	6,2	8,3	12,4	16,5	33,0
4" - 8"	0,34	6,6	8,8	13,1	17,5	35,0
				Standard 450 lbf-actuator	min. stroking time for 1100 lbf-actuator	Standard 450 lbf-actuator

## Options

2 additional way-switch	freely adjustable as potential-free contacts (opener/closure)
Electric power failure protection	Mounted on the own body of the actuator fail safe version freely selectable
Communication software	with data cable, for parameterization and diagnosis of the actuator
Bluetooth module BT-1	Wireless connection for configuration software DeviceConfig (can be retrofitted)

## Actuator with fail safe feature (option)

- Safety function at power failure
- Power supply above high performance capacitors
- Safety position open, closed or selected in any valve position
- self-employed monitoring of the state of charge of the high performance capacitors



## Maximal differential pressure

(for temperatures to 38°C)

**Please note the application limits at temperatures above 38°C:**

Size	driving force: 450 lbf		driving force: 1100 lbf	
	max. pressure (psi)			
	carbon/SFC - stainless steel coated	STN2	carbon/SFC - stainless steel coated	STN2
1/2"	750	750	750	750
3/4"	750	750	750	750
1"	750	750	750	750
1 1/2"	750	750	750	750
2"	750	750	750	750
3"	430	165	695	430
4"	275	105	480	265
6"	140	50	230	130
8"	80	-	205	-

## Upper limit of pressure class

	Upper limit for permissible pressures in bar to pressure class	
	ANSI150	ANSI 300
P maximum carbon steel	19,6	51,7
P maximum stainless steel	19,0	49,6



## Application limits for GS3-valves of stainless steel

The pressures are not allowed to exceed the series GS3 of stainless steel of GS-valves even if the pulling force of the actuator allow this.

### 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	-	-	-	-	-	-	-	-

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
8"	230,0	230,0	230,0	145,0	135,0	120,0	105,0	100,0	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

## Application limits for GS3-valves of carbon steel

The pressures are not allowed to exceed the series GS3 of carbon steel of GS-valves even if the pulling force of the actuator allow this.

### 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	-	-	-	-	-	-	-	-

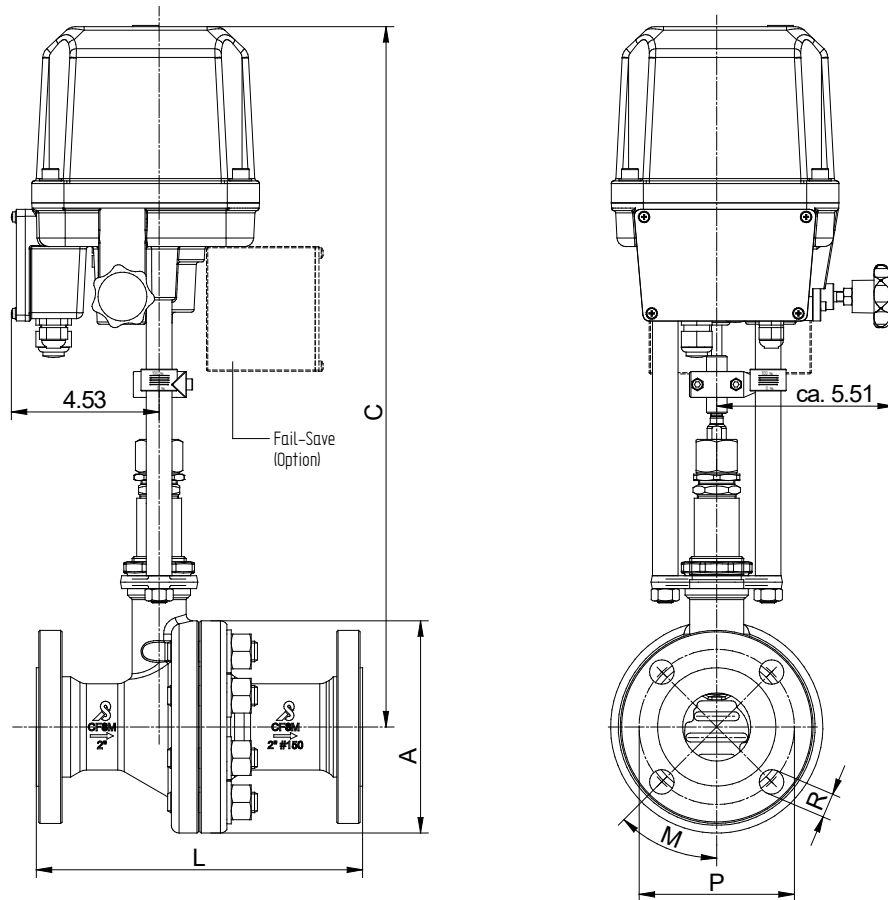
Limitation for SFC-sliding discs: 570°F

### 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	230	145	135	120	105	87	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

## Dimensions and weights



DN	ØA	C		P	M	number	L	R	ANSI 150			
		with actuator							Weight (lbs) with actuator			
		2 kN	5 kN						2 kN		5 kN	
1/2"	3,7	20,6	21,8	2,4	1,8	4	7,2	0,6	without Fail-Save	with Fail-Save	without Fail-Save	with Fail-Save
3/4"	4,5	20,7	22,0	2,8	1,8	4	7,2	0,6	31,7	35,7	33,7	37,7
1"	4,9	20,9	22,2	3,1	1,8	4	7,2	0,6	35,3	39,2	37,3	41,2
1 1/2"	6,1	21,5	22,8	3,9	1,8	4	8,7	0,6	44,5	48,5	46,5	50,5
2"	6,5	21,7	23,0	4,8	1,8	4	10,0	0,8	49,6	53,6	51,6	55,6
3"	8,3	22,3	23,6	6,0	1,8	4	11,7	0,8	79,8	83,8	81,8	85,8
4"	9,8	22,9	24,2	7,5	0,9	8	13,9	0,8	107,4	111,3	109,3	113,3
6"	12,6	24,1	25,4	9,5	0,9	8	18,0	0,9	174,4	178,4	176,4	180,3
8"	15,0	25,3	26,5	11,8	0,6	12	21,4	1,0	284,6	288,6	286,6	290,6

DN	P	M	number	L	R	ANSI 300				stroke
						Weight (lbs) with actuator				
						2 kN		5 kN		
1/2"	2,6	1,8	4	7,5	0,6	without Fail-Save	with Fail-Save	without Fail-Save	with Fail-Save	0,24
3/4"	3,3	1,8	4	7,6	0,8	34,39	38,36	36,38	40,34	0,24
1"	3,5	1,8	4	7,8	0,8	37,92	41,89	39,90	43,87	0,24
1 1/2"	4,5	1,8	4	9,3	0,9	50,93	54,90	52,91	56,88	0,24
2"	5,0	0,9	8	10,5	0,8	55,12	59,08	57,10	61,07	0,31
3"	6,6	0,9	8	12,5	0,9	89,07	93,04	91,05	95,02	0,31
4"	7,9	0,9	8	14,5	0,9	126,55	130,51	128,53	132,50	0,33
6"	10,6	0,6	12	18,6	0,9	216,49	220,46	218,48	222,45	0,33
8"	13,0	0,6	12	22,4	1,0	347,23	351,20	349,21	353,18	0,33

Dimensions in inch

## Dimensions and weights

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	-	-	-	-	-	-	-	-	-	-	-	-