

GS 3 series - DN 15 up to DN 250

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 40 bar
- 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

Design	wafer-type design - for flanges acc. DIN EN 1092-1 form B or ASME B16.5 RF - with threaded connection (only PN40 in stainless steel; DN15 - DN50)		
Nominal Sizes	DN 15 - 250, 1/2" - 12"		
Nominal pressure acc. DIN 2401 for flanges with facing type B	PN 40 (fits also to PN 10-25) PN 16	DN 15 - DN 150	DN 200 - DN 250
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150 ANSI 300	DN15 - DN 250	DN 15 - DN 150
Nominal pressure acc. JIS for „raised face“ flanges	10K 20K	DN 15 - DN 50	DN 15 - DN 40
Fluid Temperature	Versions from -60°C up to +350°C		
Flange gaskets (customer side)	DIN EN 1514-1 or ANSI B16.21 in the respective nominal pressure rating		
Rangeability	30 : 1		
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		
Applications acc. PED 2014/68/EU	stainless steel or carbon steel body		up to category II
	stainless steel body with threaded connection		up to category I

* 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 [°C]	-60	-60	-60	-29	-29	-29
Tmax [°C]	350	350	350	350	350	350
Body material carbon steel with stainless steel body cover						
Tmin [°C]	-60	-60	-10	-20	-20	-20
Tmax [°C]	350	350	350	350	350	350

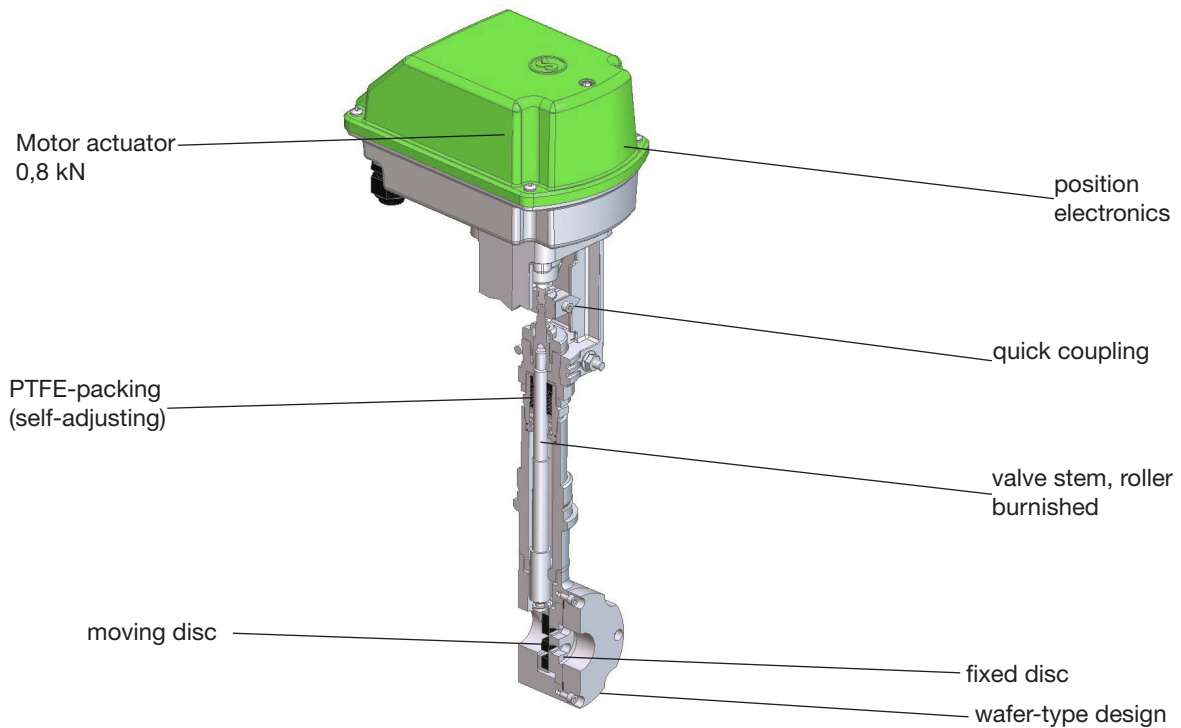


Materials

Body	Stainless steel 1.4408	Carbon steel 1.0619
Bodycover	Stainless steel 1.4404 or 316L	
Packing	PTFE (Carbon filled), spring 1.4310	
Actuating stem	Stainless steel 1.4571, roller burnished	
Bellows	Stainless steel 1.4571	
Fixed disc	Stainless steel 1.4571, coated	STN2-disc
Sliding disc	Special carbon material	STN2-disc
Guide ring for sliding disc	Stainless steel 1.4571	

Limitations

Additionally to the limitations of the pressure rating valves with threaded connections are limited to applications of the category I of the PED 2014/68/EU.



Technical Information CA-Actuator

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	1.5 / 2 / 3 s/mm (Standard: 2 s/mm)				2 or 3 s/mm (Standard: 3 s/mm)	
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	800 N					
Protection class (EN 60529)	IP 65***					
Adm. Ambient temperature	-10 °C to +60 °C					
Duty cycle	100 %					

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

**: Minimum on-time 200 ms

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

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

Motor Stroking Times for CA-actuators

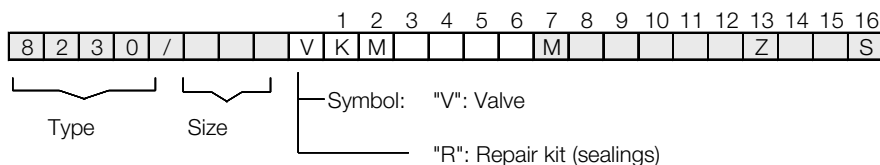
Stroking times in seconds			
Setting	DN 15 - DN 40	DN 50 - DN 80	DN 100 - DN 250
1,5 s/mm	9,5	12,5	13
2 s/mm	12,5	16,5	17
3 s/mm	19	25	26

Admissible Differential Pressures

Nominal Size	maximum differential pressure [bar]												
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
Unit carbon/SFC-stainless steel	51,1	51,1	50	40,9	31	20,3	17,1	10,9	6,9	4,7	3,5	2	1,3
STN 2-unit	48,8	37,5	28,1	20,9	14,3	8,6	7	4,2	2,6	1,8	1,3	0,7	-

	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI150	ANSI 300	ANSI 600
P max. carbon steel	16	40	100	19,6	51,1	102,1
P max. stainless steel				19,0	49,6	99,3

Ordering Number System



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

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 1.0619	- without safety position	C Control actuator CA24C, 24V AC/DC, with position electronic, stanard adjustment: control signal 4-20mA, feedback 4-20mA, 2 limit switch D Control Actuator CA260C, 100-240V, 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, 100-240V, 50/60Hz
		F GS3 flangeless design acc. ANSI 300	1 stainless steel 1.4408	2 Fail-Safe: normally closed at power failure	
		G GS3 flangel-less design acc. DIN, PN10-PN40		3 Fail-Safe: normally open at power failure	
		R GS3 version with inner thread acc. ISO 228-1 (G-thread), pressure rating PN40		4 Fail Safe: position acc. customer request	
		U GS3 version with inner NPT thread acc. ANSI B 1.20.1, pressure rating PN40			
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	- stainless steel	- 100% (stand.)	- linear
A Nut and nut acc. DIN 2512	1 stainless steel bellow 316Ti	9 STN2/STN3-disc	1 STN2-disc	A red. to 63%	1 equal percentage
C Nut and tongue acc. DIN 2512		S SFC-disc	3 STN3- disc	1 red. to 40%	
E 2x lowered face acc. DIN 2513				B red. to 25%	
H Lowered and raised face acc. DIN 2513				2 red. to 16%	
				3 red. to 10%	
			4 red. to 6,3%	4 red. to 2,5%	
			5 red. to 1%	5 red. to 1%	
			6 red. to 20%	6 red. to 20%	
			7 red. to 12%	7 red. to 12%	
			8 red. to 2%	8 red. to 2%	
			9 red. to 0,4%	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/mm On-off actuators: 3 s/mm			
		4 3 s/mm CA-actuators only			
		5 1,5 s/mm CA-actuators only			

Ordering example:

8230/050VKME10C

GS-Motor Valve compact type 8230, DN 50, 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, Kvs-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.

PN40

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in stainless steel						Sliding unit: STN2 max. admissible pressures for GS3-valves in stainless steel					
	100°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
	15-32	40	40	40	40	40	40	40	40	40	40	40
40	40	40	40	40	40	40	40	40	40	40	40	37
50	40	40	40	40	40	40	40	40	40	40	40	40
65	40	40	40	40	40	40	40	40	40	40	37	32
80	40	40	40	40	40	40	36	34	33	26	22	19
100	33	33	33	33	33	33	32	31	30	24	20	17
125	23	23	23	23	23	23	21	21	19	16	13	11
150	16	16	16	16	16	16	15	15	14	11	9	8
200 (only PN16)	16	16	15	13	12	11	8	7	6	5	4	3
250 (only PN16)	10	9	9	8	7	6	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

PN100

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in stainless steel						Sliding unit: STN2 max. admissible pressures for GS3-valves in stainless steel					
	100°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
	15	100	100	100	93	84	79	100	100	100	93	84
20	100	100	89	81	73	68	100	100	89	81	73	68
25	88	81	70	63	57	54	88	81	70	63	57	54
32	100	93	80	73	65	62	100	93	80	73	65	60
40	88	81	70	63	57	54	72	69	65	53	43	37
50	100	100	100	100	100	94	77	73	70	56	46	40
65	80	80	80	79	71	67	62	59	56	45	37	32
80	48	48	48	48	48	44	36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

ANSI150

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in stainless steel								Sliding unit: STN2 max. admissible pressures for GS3-valves in stainless steel							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
	15-125	19,0	18,4	16,2	14,8	13,7	12,1	10,2	8,4	19,0	18,4	16,2	14,8	13,7	12,1	10,2
150	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	16,2	16,2	16,2	14,8	13,7	11,8	9,7	8,4
200	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	10,5	10,0	8,3	7,6	6,9	5,5	4,5	3,9
250	10,4	10,4	10,4	9,9	9,4	8,4	7,4	6,8	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI300

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in stainless steel								Sliding unit: STN2 max. admissible pressures for GS3-valves in stainless steel							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
	15-65	49,6	48,1	42,2	38,5	35,7	33,4	31,6	30,3	49,6	48,1	42,2	38,5	35,7	33,4	31,6
80	48,0	48,0	42,2	38,5	35,7	33,4	31,6	30,3	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0
100	33,0	33,0	33,0	33,0	33,0	33,0	31,6	30,3	33,0	33,0	33,0	31,7	30,1	24,4	20,1	17,3
125	23,0	23,0	23,0	23,0	23,0	23,0	23,0	23,0	22,0	22,0	22,0	21,0	19,9	16,1	13,2	11,5
150	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	15,4	14,6	11,8	9,7	8,4
200	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	10,5	10,0	8,3	7,6	6,9	5,5	4,5	3,9

Limitation for SFC-sliding discs: 300°C

ANSI600

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in stainless steel								Sliding unit: STN2 max. admissible pressures for GS3-valves in stainless steel							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
	15-20	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	99,3	96,2	84,4	77,0	71,3	66,8	63,2
25	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2
32	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,2
40	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2	72,5	72,5	72,5	69,0	65,5	53,1	43,6	37,7
50	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	77,7	77,7	77,7	73,9	70,2	56,9	46,7	40,4
65	80,0	80,0	80,0	77,0	71,3	66,8	63,2	60,7	62,5	62,5	41,7	59,5	56,4	45,8	37,6	32,5
80	48,0	48,0	48,0	48,0	48,0	48,0	48,0	44,5	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0

Limitation for SFC-sliding discs: 300°C

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.

PN40

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15-50	40	40	40	40	40	40	40	40	40	40	40	40
65	40	40	40	40	40	40	40	40	40	37	32	32
80	40	40	40	40	40	40	36	34	33	26	22	19
100	33	33	33	33	33	33	33	31	30	24	20	17
125	23	23	23	23	23	23	22	21	19	16	13	11
150	16	16	16	16	16	16	16	15	14	11	9	8
200 (only PN 16)	16	16	15	13	12	11	8	7	6	5	4	3
250 (only PN 16)	10	9	9	8	7	6	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

PN100

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15 - 20	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	94	87	100	100	100	94	87	87
32	100	100	100	100	100	99	100	100	100	84	69	60
40	100	100	100	100	94	87	72	69	65	53	43	37
50	100	100	100	100	100	94	77	73	70	56	46	40
65	80	80	80	80	80	76	62	59	56	45	37	32
80	48	48	48	48	48	44	36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

ANSI150

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-125	19,6	19,2	17,7	15,8	13,8	12,1	10,2	8,4	19,6	19,2	17,7	15,8	13,8	12,1	10,2	8,4
150	16,0	16,0	16,0	15,8	13,8	12,1	10,2	8,4	16,2	16,2	16,2	15,4	13,8	11,8	9,7	8,0
200	16,0	16,0	16,0	15,8	13,8	12,1	10,2	8,4	10,5	10,0	8,3	7,6	6,9	5,5	4,5	3,9
250	10,5	10,5	10,5	9,9	9,4	8,4	7,4	6,0	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI300

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-50	51,1	50,1	46,6	45,1	43,8	41,9	39,8	37,6	51,1	50,1	46,6	45,1	43,8	41,9	39,8	37,6
65	51,1	50,1	46,6	45,1	43,8	41,9	39,8	37,6	41,7	41,7	41,7	39,7	37,6	33,5	37,6	33,0
80	48,0	48,0	46,6	45,1	43,8	41,9	39,8	37,6	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0
100	33,0	33,0	33,0	33,0	33,0	33,0	33,0	33,0	33,0	33,0	33,0	31,7	30,1	24,4	20,0	17,5
125	23,0	23,0	23,0	23,0	23,0	23,0	23,0	23,0	22,1	22,1	22,1	21,0	19,9	16,1	13,2	11,5
150	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	15,4	14,6	11,8	9,7	8,4
200	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	10,5	10,0	8,3	7,6	6,9	5,5	4,5	3,9

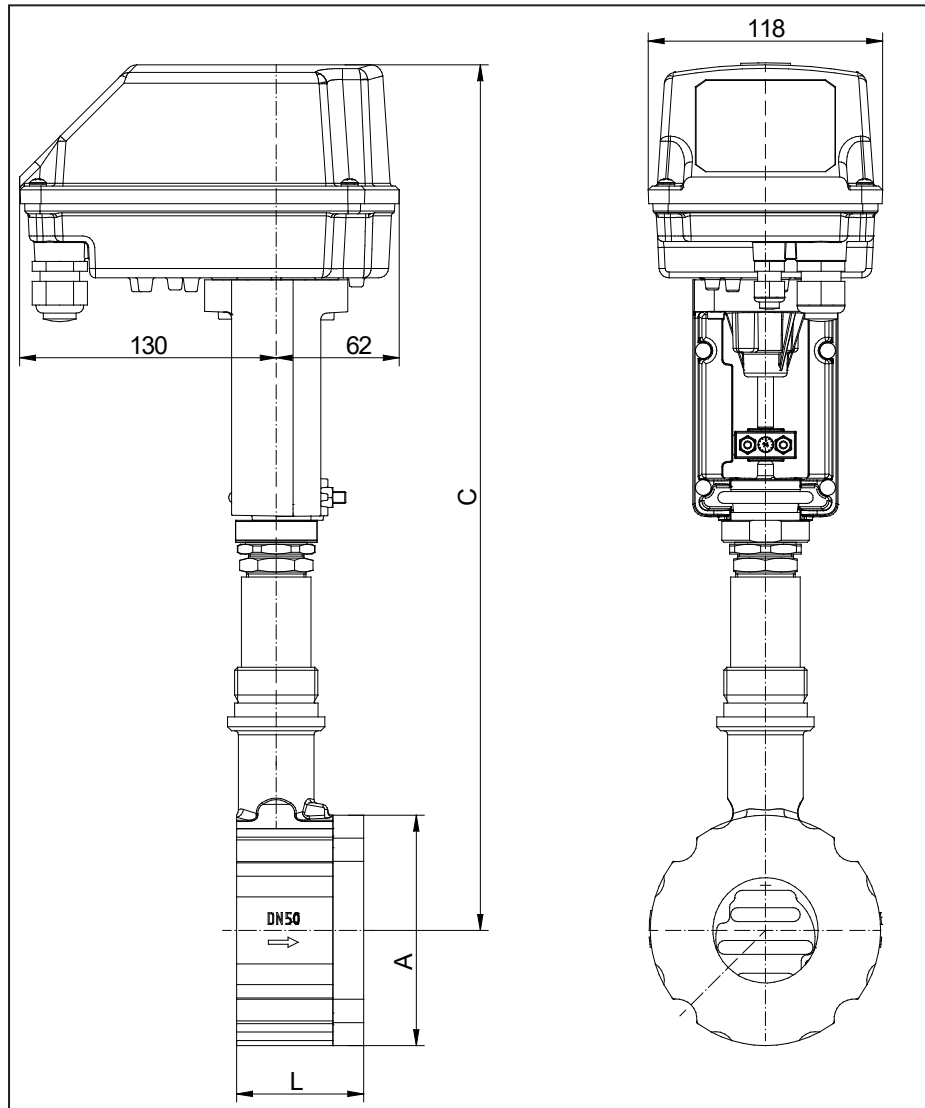
Limitation for SFC-sliding discs: 300°C

ANSI600

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-25	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1
32	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1	102,1	100,2	93,2	90,2	87,6	83,9	69,6	60,0
40	100,0	100,0	93,2	90,2	87,6	83,9	79,6	75,1	72,5	72,5	72,5	69,0	65,5	53,1	43,6	37,0
50	100,0	100,0	93,2	90,2	87,6	83,9	79,6	75,1	77,7	77,7	77,7	73,9	70,2	56,9	46,7	40,0
65	80,0	80,0	80,0	80,0	80,0	80,0	79,6	75,1	62,5	62,5	62,5	59,5	56,4	45,8	37,6	32,0
80	48,0	48,0	48,0	48,0	48,0	48,0	48,0	44,0	36,6	36,6	36,6	36,8	33,0	26,8	22,0	19,0

Limitation for SFC-sliding discs: 300°C

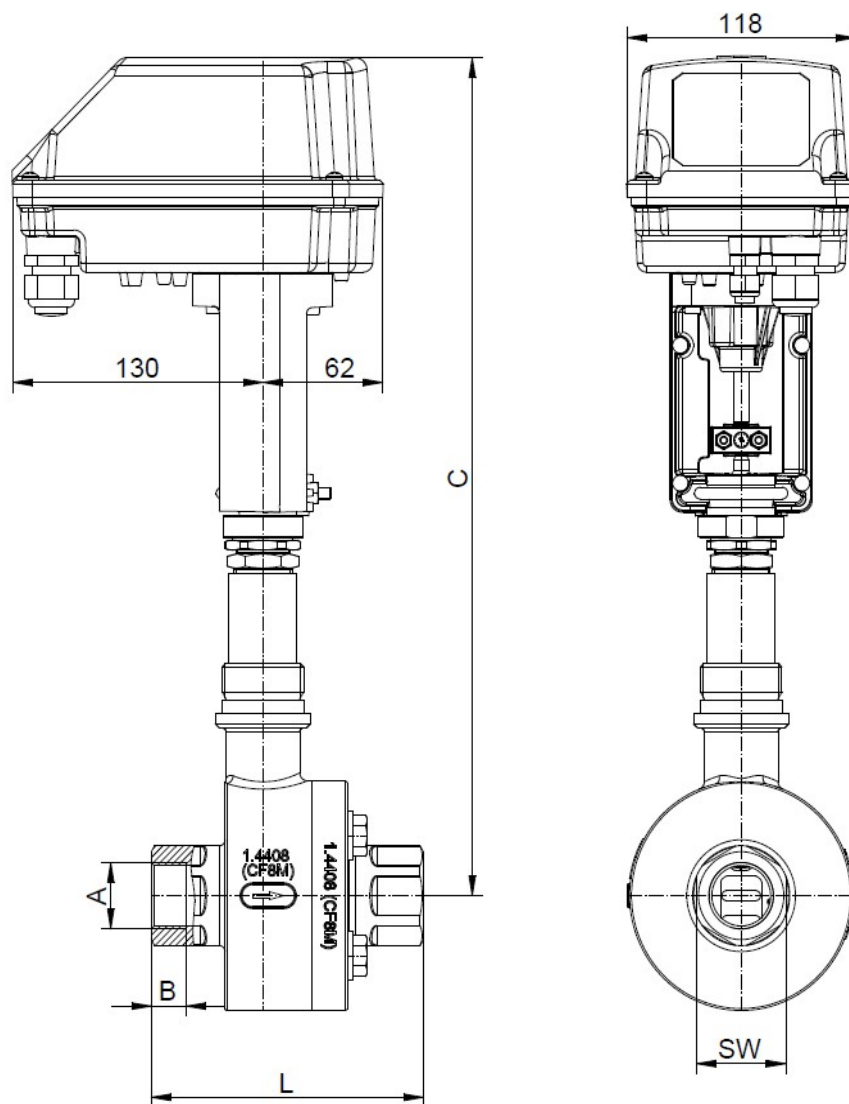
Dimensions and Weights for CA-actuators wafer-type construction



DN	A	C	L	Stroke	Weight kg
15	64	410	56	6	4
20	72	415	56	6	4
25	82	420	56	6	5
32	89	425	56	6	5
40	99	430	56	6	5
50	116	440	64	8	7
65	138	447	68	8	8
80	153	457	70	8	9
100	184	470	75	9	13
125	212	485	80	8,5	15

Dimensions in mm

Dimensions and Weights for CA-actuators with threaded connections



DN	A (G/NPT)	B		C	L	SW	Stroke	Weight kg
		G	NPT					
15	1/2"	15	13,6	410	127	30	6	6,5
20	3/4"	15	14,1	415	127	38	6	7,0
25	1"	18	16,8	420	140	46	6	9,9
32	1 1/4"	18	17,3	425	140	56	6	10,7
40	1 1/2"	18	17,3	430	152	64	6	11,9
50	2"	18	17,7	440	152	74	8	14,5

Dimensions in mm