

GS 3 series, DN 15 up to DN 250

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



Technical Information Valve

Design	wafer-type design for flanges acc. DIN EN 1092-1 form B		
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)	DN 15 - DN 150	
	PN 16	DN 200 - DN 250	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150	DN15 - DN 250	
	ANSI 300	DN 15 - DN 150	
Nominal pressure acc. JIS for „raised face“ flanges	10K	DN 15 - DN 50	
	20K	DN 15 - DN 40	
Fluid Temperature	Versions from -60°C up to +350°C		
Rangeability	30 : 1		
Leakage % of Kvs IEC 60534-4 EN 12266-1	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2
	< 0,0001	< 0,0005	< 0,001
	IV-S1	IV-S1	IV
	E	F	F
Specific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1		

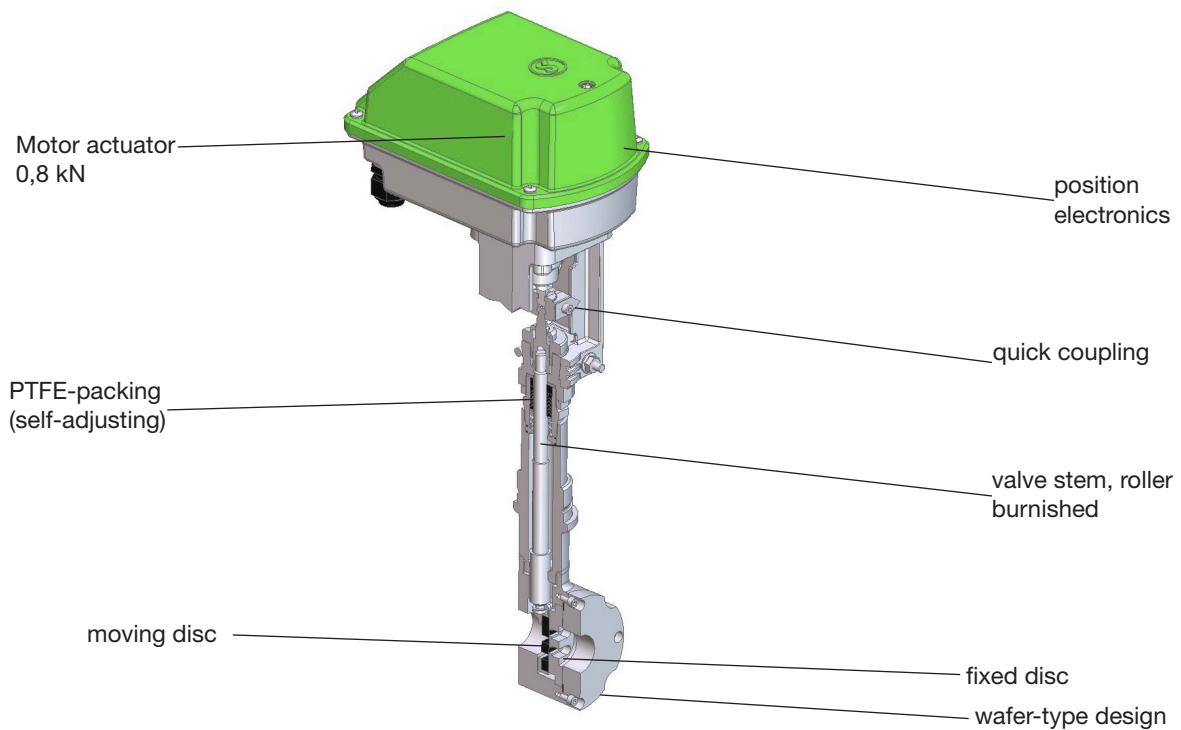
* With DN15 with reduction of less than 25%, different leakage rates possible.
K_{vs}-values see data sheet 8001.

Fluid temperature

Rating	PN40	PN 16	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	



Technical Information CA-Actuator

Function	Control				On/Off	
	CA24C	CA260C	CA24C-R	CA260C-R	CA24	CA260
Motor type	24V AC/DC	90-260V AC	24V AC/DC	90-260V AC	24V AC/DC	90-260V AC
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-term**	
Feedback	(0)2-10V / (0)4-20mA				optional	
Limit switch	2				optional	
Potentiometer feedback	-				optional	
Max. switching capacity	24V AC/DC 200 mA				250V AC/DC 1A	
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. 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	-10°C to +60°C					
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		
	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

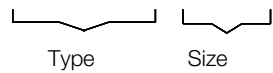
Nominal Size	maximum differential pressure [bar]												
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
Unit carbon/SFC-stainless steel	51,1	51,1	50	40,9	31	20,3	17,1	10,9	6,9	4,7	3,5	2	1,3
STN 2-unit	48,8	37,5	28,1	20,9	14,3	8,6	7	4,2	2,6	1,8	1,3	-	-

	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 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

8 2 3 0 / V K M M Z S



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

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 F G	GS3 flangeless design acc. ANSI 150 GS3 flangeless design acc. ANSI 300 GS3 flangeless design acc. DIN, PN10-PN40	0 1	carbon steel 1.0619 stainless steel 1.4408	- 2 3 4	without safety position Fail-Safe: normally closed at power failure Fail-Safe: normally open at power failure Fail Safe: position acc. customer request	C D E F	Control actuator CA24C, 24V AC/DC, with position electronic, stanard adjustment: control signal 4-20mA, feedback 4-20mA, 2 limit switch Control Actuator CA260C, 90-260V 50/60Hz, with position electronic, Standard adjustment 4-20mA, feedback 4-20mA, 2 limit switch On-Of (3-point) actuator CA24, 24V AC/DC On-Off (3-point) actuator CA260, 90-260V, 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)	- 9	carbon STN2/STN3-disc	- 1	stainless steel STN2-disc	- A 1 B	100% (stand.) red. to 63% red. to 40%	- 1	linear equal percentage
A	Nut and nut acc. DIN 2512	1	stainless steel bellow 316Ti	S	SFC-disc	3	STN3- disc	2 C 3 4 5 6 7 8 9	red. to 25% red. to 16% red. to 10% red. to 6,3% red. to 2,5% red. to 1% red. to 20% red. to 12% red. to 2% red. to 0,4%		
C	Nut and tongue acc. DIN 2512										
E	2x lowered face acc. DIN 2513										
H	Lowered and raised face acc. DIN 2513										
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	- 4 5	standard: control actutors: 2 s/mm On-off actuators: 3 s/mm 3 s/mm CA-actuators only 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						Sliding unit: STN2					
	max. admissible pressures for GS3-valves in stainless steel						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	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	-	-	-	-	-	-
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						Sliding unit: STN2					
	max. admissible pressures for GS3-valves in stainless steel						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	79
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								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								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	8,4
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	-	-	-	-	-	-	-	-
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								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								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	30,3
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

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 stainless steel								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	60,7
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 max. admissible pressures for GS3-valves in carbon steel						Sliding unit: STN2 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
65	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	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 (nur PN 16)	16	16	15	13	12	11	-	-	-	-	-	-
250 (nur PN 16)	10	9	9	8	7	6	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI150

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in carbon steel								Sliding unit: STN2 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
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	-	-	-	-	-	-	-	-
250	10,5	10,5	10,5	9,9	9,4	8,4	7,4	6,0	-	-	-	-	-	-	-	-

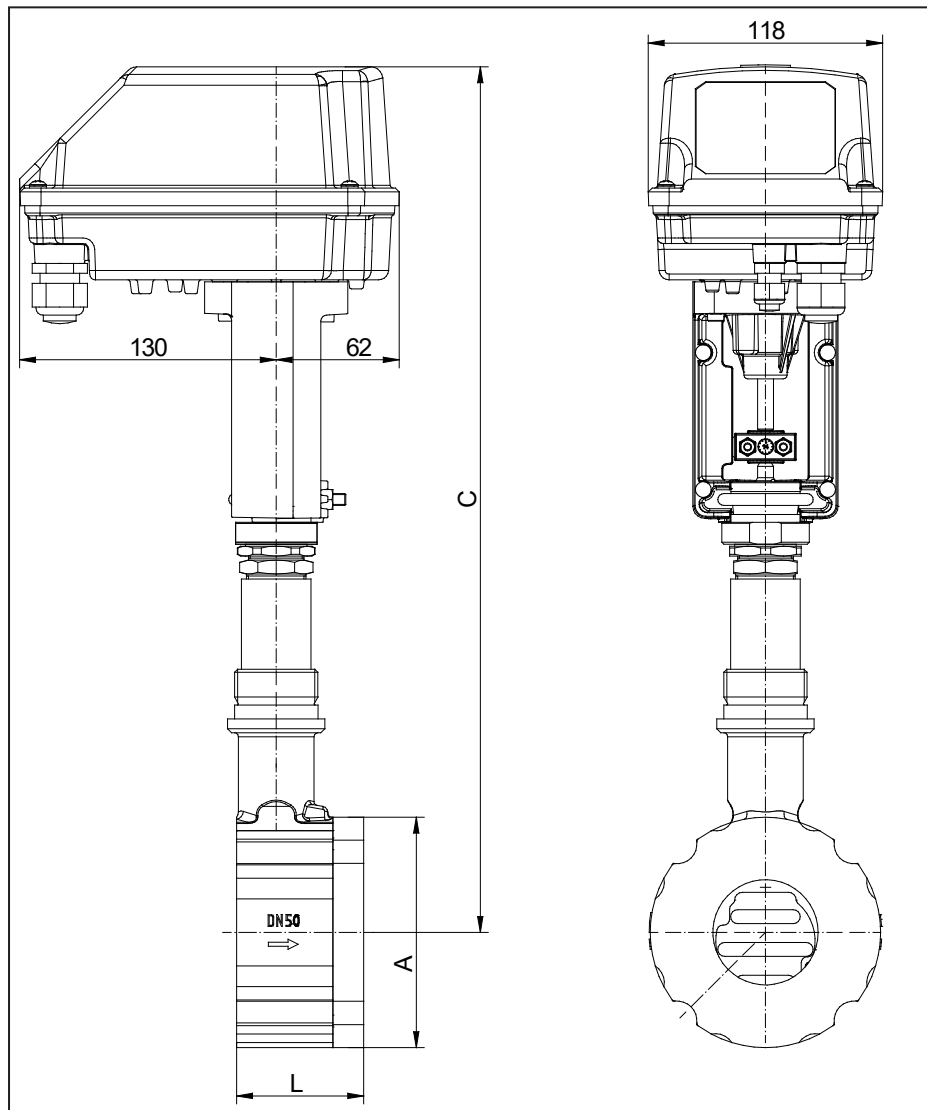
Limitation for SFC-sliding discs: 300°C

ANSI300

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in carbon steel									Sliding unit: STN2 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	

Limitation for SFC-sliding discs: 300°C

Dimensions and Weights for CA-actuators



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