

GS High Temperature Valve

Model 8024-GS3

With Integrated Positioner



Pneumatic control valve with integrated positioner for the control of neutral through to highly aggressive media

Technical Data

Body design	Flangeless, wafer-type construction further versions see data-sheet 8023-GS1	
Nominal sizes	DN 15 to DN 200	
Nominal pressure	PN 40 (fits also to PN 10-25)	DN 15 - DN 150
	PN 100	DN 15 - DN 80
	PN 16	DN 200
Nominal pressure acc. ANSI	ANSI 150	DN15 - DN 200
	ANSI 300	DN 15 - DN 150
	ANSI 600	DN 15 - DN 80
Supply air pressure	max. 6 bar	
Media temperature	-60°C up to +450°C for function unit Carbon-stainless steel -60°C up to +450°C for function unit STN2 up to +530°C with Inconel 625 bellows and STN 2 function unit	
Rangeability	40 : 1	
Leakage rate (% of Kvs-value)	Function unit: Carbon-stainless steel	Function unit: STN2
	< 0.0001	< 0.001

K_{vs}-values see data sheet 8001.

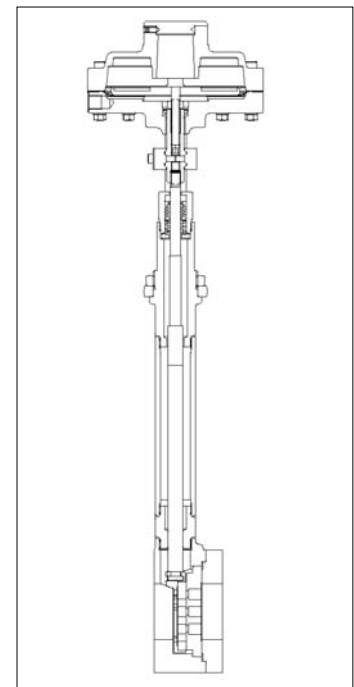
Technical Data - Positioner

	Digital positioner	i/p-positioner	p/p-positioner
Input signal range	0/4 - 20 mA, 0/2 - 10 V	0/4 - 20 mA, 0/2 - 10 V	0,2 - 1 bar
Supply voltage, electrical	24 V DC, maximum 10 W	none	none
Supply air pressure	max. 6 bar	max. 6 bar	max. 6 bar
Hysteresis	< 0,5 %	< 1 %	< 1 %
Rangeability	40 : 1	30 : 1	30 : 1
Characteristics	linear, equal percentage, user-defined, process optimized*	Characteristics of function unit	Characteristics of function unit
Adjustment (Stroke, zero point)	self-adapting	mechanical	mechanical
Ambient temperature	-10°C up to + 75°C	-10°C up to +60°C	-10°C up to +60°C
Protection class acc. DIN 40050	IP65	IP 54	IP 54
Ex-proof (Optional)	-	EExibIT6 up to 50°C EExibIT5 up to 60°C	-

*Produces a linear process flow characteristic for optimal control. After entering a few process data points (e.g. upstream and downstream pressures) the optimised flow characteristic is calculated by the positioner configuration software and stored in the positioner memory.

Materials

Valve Body	stainless steel 316 Ti resp. 318 (1/2" to 6")	
Head Section	stainless steel 316 Ti	
Diaphragm Casing	aluminium, KTL-coated	
Actuator Springs	stainless steel 301	
Packing	carbon-filled PTFE (spring SST 301)	
Valve Stem	stainless steel 316 Ti, roller burnished	
Valve Plate (fixed)	stainless steel 316 Ti, stellite coated	STN2-plate
Valve Disc (moving)	special carbon material	STN2-disc



Options

- Metal bellows
- External i/p-converter
- Positioner (also EEx ib IIC T6)

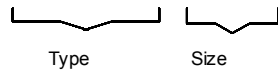
GS High Temperature Valve 8024-GS3

With Integrated Positioner



Ordering Number System

8	0	2	4	/				V	R					M					Z			S
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Symbol: "V": Valve
"R": Repair kit (sealings)

1 - 5 : Please quote all 5 sections.
6 - 16: Quote only if required.

1. Valve Type	2. Body Design	3. Body Material	4. Safety Function	5. Actuator	6. Special Version	7. Springs	8. Stem Sealing
R GS-Control Valve with pneumatic actuator (type 8024)	E GS3 - flangeless design acc. ANSI 150	1 Stainless Steel 1.4571 / 1.4581	0 Spring closes	3 Diaphragm actuator 125 cm ²	M To state if some sections 7 - 16 are quoted	- Standard	- PTFE-packing self-adjusting (Standard)
	F GS3 - flangeless design acc. ANSI 300		1 Spring opens	4 Diaphragm actuator 250 cm ²	A Nut and nut acc. DIN2512	4 8 springs	1 Additional bellows 1.4571
	K GS3 - flangeless design acc. ANSI 600			5 Diaphragm actuator 500 cm ²	C Nut and tongue acc. DIN 2512	8 16 springs	3 Additional Inconel 625 bellows 2.4856
	G GS3 - flangeless design acc. DIN, PN 10-PN 40				E 2x lowered face acc. DIN 2513		
	H GS3 - flangeless design acc. DIN, PN 100				H Lowered and raised face acc. DIN 2513		

9. Moving Disc	10. Fixed Plate	11. Kvs-Values	12. Flow Characteristic	13. Accessories	14. Positioners	15. Signalling Equipment	16. Further Special Versions
- Carbon	- Stainless steel 1.4571, coated	- 100 % (Standard)	- Linear	Z State, if in following sections accessories are quoted.	- without 1 integrated p/p positioner 3 integrated i/p positioner 6 integrated i/p positioner Ex with terminal adapter 8 integrated i/p positioner with terminal adapter D integrated digital i/p- positioner IP 65 J integrated digital i/p- positioner IP65 with high air capacity	- without 0 2 limit switches M12x1 DC 10-30V PNP	S Other special versions have to be quoted in letters!
B Carbon, fibre reinforced	1 STN2 (only in combination with preceding section "9" STN2)	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 %	1 Equal-%				
9 STN2							

Ordering Example: 8024/050VRG103M-----Z3
GS3-Control Valve Type 8024 with pneumatic actuator, DN 50, PN 10 - PN 40, body material stainless steel, spring closes, actuator 125 cm², PTFE-V-shaped sealings, function unit: carbon-stainless steel 1.4571 coated, linear characteristic, i/p-positioner

GS High Temperature Valve 8024-GS3

With Integrated i/p- or p/p-positioner



Admissible Differential Pressures

(for temperatures up to 120°C)

For temperatures exceeding 120°C:
consider operation limits

Unit: carbon-stainless steel, coated

Actuator Size	125 cm ²				250 cm ²				500 cm ²			
	Spring Range (bar)		1,8 up to 3,8		1,2 up to 2,2		1,5 up to 2,7		1,2 up to 2,2		1,5 up to 2,7	
Supply Pressure (bar)	4		5		3		4		3		4	
max. admissible differential pressure for PN100-body (bar)												
DN	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off
15	100	100	100	100	100	100	100	100	-	-	-	-
20*	77	77	80	80	80	80	80	80	-	-	-	-
25	57	57	71	71	98	98	100	100	100	100	100	100
32*	42	42	52	58	73	73	80	80	80	80	80	80
40	29	29	36	44	49	49	60	60	100	100	100	100
50	17	19	21	29	29	29	35	40	60	60	72	72
65	14	16	17	24	24	24	29	34	49	49	59	59
80	8	10	10	15	14	14	17	22	29	29	35	44
100	5	6	6	10	9	9	10	14	18	18	22	28
125	3	4	4	6	6	6	7	9	12	12	14	19
150	2	3	3	5	4	4	5	7	9	9	10	14
200	2	2	2	3	3	3	3	4	5	5	6	8
Spring Configuration	3 (Standard)		4		3 (Standard)		4		6 (Standard)		8	

Standard	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
P max.	16	40	100	16	40	80

Unit: STN 2

Actuator Size	125 cm ²				250 cm ²				500 cm ²			
	Spring Range (bar)		1,8 to 3,8		1,2 to 2,2		1,5 to 2,7		1,2 to 2,2		1,5 to 2,7	
Supply Pressure (bar)	4		5		3		4		3		4	
max. admissible differential pressure for PN100-body (bar)												
DN	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off	Control	On - Off
15	55	55	68	70	95	95	100	100	100	100	100	100
20*	37	37	40	40	40	40	40	40	40	40	40	40
25	25	26	31	40	43	43	53	55	89	89	100	100
32*	17	19	22	30	30	30	36	40	40	40	40	40
40	11	13	14	20	19	19	24	27	40	40	48	58
50	6	8	8	12	11	11	13	17	23	23	27	35
65	5	6	6	10	9	9	11	14	18	18	22	28
80	3	4	4	6	5	5	6	8	11	11	13	17
100	2	2	2	3	3	3	4	5	6	6	8	10
125	-	-	2	2	2	2	3	4	4	4	5	7
150	-	-	1	2	2	2	2	3	3	3	4	5
200	-	-	-	-	-	-	-	-	-	-	-	-
Spring Configuration	3 (Standard)		4		3 (Standard)		4		6 (Standard)		8	

Standard	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
P max.	16	40	100	16	40	80

* Flanges DN 20 and DN 32 are not standardised in pressure numbers PN 63 and PN 100.

GS High Temperature Valve 8024-GS3

With Integrated Digital Positioner

(also On/Off-valves and valves with side-mounted positioner)



Admissible Differential Pressures

(for temperatures up to 120°C)

For temperatures exceeding 120°C:
consider operation limits

Unit: carbon-stainless steel, coated

Actuator Size	125 cm ²		250 cm ²		500 cm ²	
	4,5	5,5	3,0	4,0	3,0	4,0
Supply Pressure (bar)	4,5	5,5	3,0	4,0	3,0	4,0
DN	max. admissible differential pressure for PN 100-body (bar)					
15	100	100	100	100	-	-
20*	80	80	80	80	-	-
25	100	100	100	100	-	-
32*	80	80	80	80	-	-
40	59	73	100	100	-	-
50	38	47	65	78	100	100
65	31	39	54	65	80	80
80	20	24	34	41	48	48
100	12	15	21	26	33	33
125	8	10	14	17	23	23
150	6	8	10	13	16	16
200	4	5	6	8	12	15
Spring Configuration	3 (Standard)	4	3 (Standard)	4	6 (Standard)	8

Standard

P max.	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
	16	40	100	16	40	80

Unit: STN 2

Actuator Size	125 cm ²		250 cm ²		500 cm ²	
	4,5	5,5	3,0	4,0	3,0	4,0
Supply Pressure (bar)	4,5	5,5	3,0	4,0	3,0	4,0
DN	max. admissible differential pressure for PN100-body (bar)					
15	97	100	100	100	-	-
20 *	73	80	80	80	-	-
25	53	66	91	100	100	100
32 *	39	48	67	80	80	80
40	26	32	45	55	72	72
50	15	19	26	32	54	66
65	12	15	22	26	44	53
80	8	10	13	15	26	32
100	5	6	8	10	16	20
125	3	4	5	7	11	13
150	2	3	4	5	8	9
200	-	-	-	-	-	-
Spring Configuration	3 (Standard)	4	3 (Standard)	4	6 (Standard)	8

Standard

P max.	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
	16	40	100	16	40	80

* Flanges DN 20 and DN 32 are not standardised in pressure numbers PN 63 and PN 100.

GS High Temperature Valve 8024-GS3

With Integrated Positioner

Operation Limits For GS3-Valves From Stainless Steel

These pressures on stainless steel GS-valves series GS3 must not be exceeded even if the actuator thrust would allow it.

PN 40

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 65	35	32	28	24	21	18
80	35	32	28	24	21	18
100	29	27	25	24	21	18
125	20	19	18	17	16	16
150	14	13	12	12	11	11
200 (PN16 only)	14	13	11	10	8	6

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 65	35	32	28	24	21	18	13	3
80	33	26	22	19	21	14	13	3
100	29	24	20	17	15	13	12	3
125	20	16	13	11	10	8,5	8	3
150	14	11	9,5	8,5	7	6,0	5,5	3

PN 100

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15	80	70	60	56	50	43
25	80	70	60	56	50	43
40	80	70	60	56	50	43
50	80	70	60	56	50	43
65	72	67	60	56	50	43
80	43	40	37	36	35	33

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15	80	70	60	56	50	43	31	8
25	80	70	60	56	50	43	31	8
40	65	63	43	37	32	29	26	8
50	70	56	46	40	35	31	28	8
65	56	45	37	32	28	25	22	8
80	33	26	22	19	16	14	13	8

GS High Temperature Valve 8024-GS3 With Integrated Positioner



ANSI #150

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 125	13	12	10	8,5	6,5	4,5
150	13	12	10	8,5	6,5	4,5
200	13	12	10	8,5	6,5	4,5

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 125	13	12	10	8,5	6,5	4,5	3	0,8
150	13	12	9,5	8,5	6,5	4,5	3	0,8

ANSI #300

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 65	35	32	28	24	21	18
80	35	32	28	24	21	18
100	29	27	25	24	21	18
125	20	19	18	17	16	16
150	14	13	12	12	11	11
200 (PN16 only)	14	13	11	10	8	6

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 65	35	32	28	24	21	18	13	3
80	33	26	22	19	21	14	13	3
100	29	24	20	17	15	13	12	3
125	20	16	13	11	10	8,5	8	3
150	14	11	9,5	8,5	7	6,0	5,5	3

ANSI #600

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 32	71	67	63	60	58	56
40	71	67	63	60	58	56
50	71	67	63	60	58	56
65	71	67	62	60	58	56
80	43	40	37	36	35	33

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 32	71	67	63	60	52	46	40	10
40	65	63	43	37	32	29	26	10
50	70	56	46	40	35	31	28	10
65	56	45	37	32	28	25	22	10
80	33	26	22	19	16	14	13	10

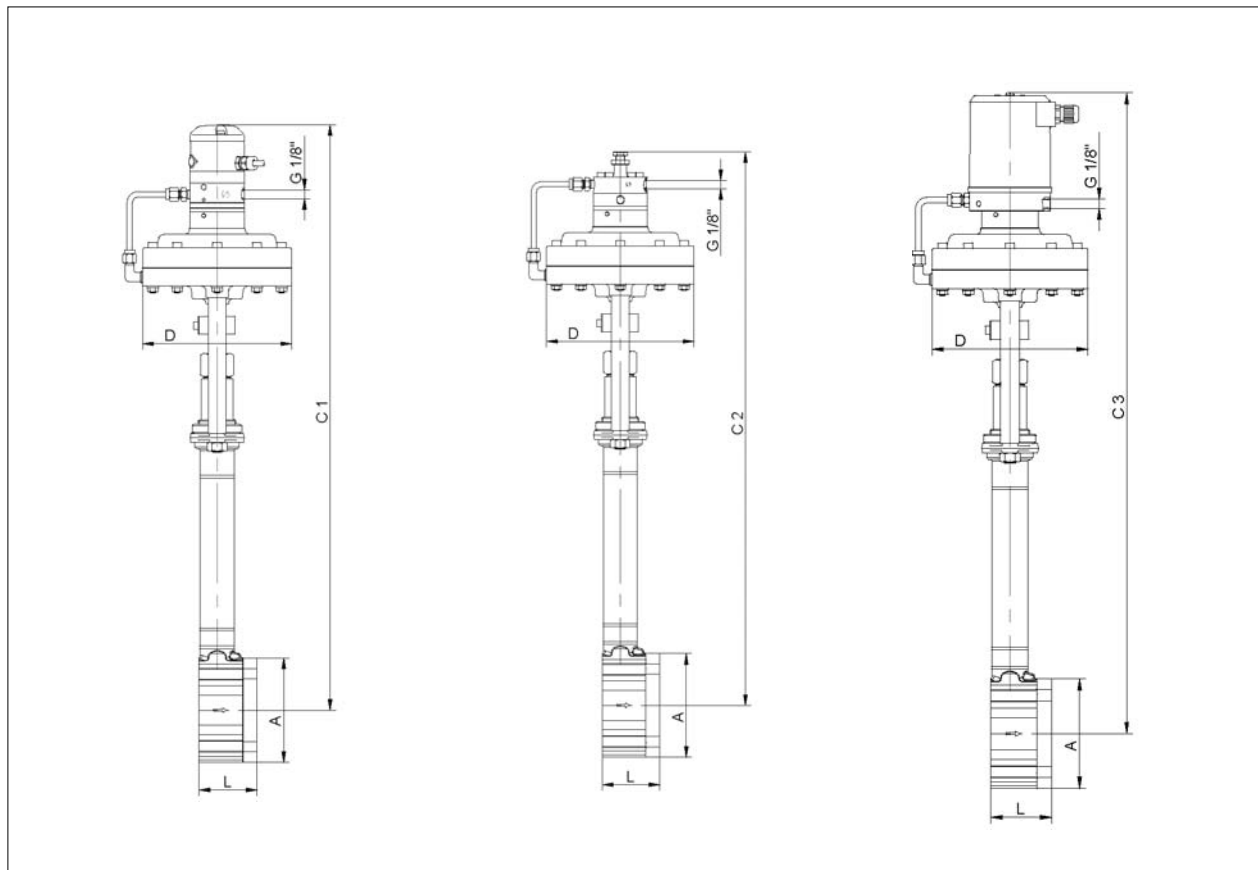
GS High Temperature Valve 8024-GS3 With Integrated Positioner

Dimensions And Weights

DN	Ø A	C1 *	C2 *	C3 *	Ø D for actuator			L	Stroke	Weight (kg) for actuator		
					D 125	D250	D500			D 125	D 250	D 500
15	64	620	590	650	165	222	222	56	6	8,5	10,7	14,4
20	72	625	595	655	165	222	222	56	6	8,7	10,9	14,6
25	82	630	600	660	165	222	222	56	6	9,1	11,3	15,0
32	89	635	605	665	165	222	222	56	6	9,5	11,7	15,4
40	99	640	610	670	165	222	222	56	6	9,9	12,1	15,8
50	116	650	620	680	165	222	222	64	8	11,5	13,7	17,4
65	138	660	630	690	165	222	222	68	8	13,3	15,5	19,2
80	153	670	640	700	165	222	222	70	8	14,4	16,6	20,3
100	184	680	650	710	165	222	222	75	8,5	17,9	20,1	23,8
125	212	695	665	725	165	222	222	80	8,5	22,1	24,3	28,0
150	242	710	680	740	165	222	222	80	8,5	25,8	28,0	31,7
200	302	740	710	770	165	222	222	92,5	8,5	42,7	44,9	48,6

* For actuator D500: +47,5 mm

Dimensions in mm



i/p - positioner

p/p - positioner

digitaler - positioner

Text an pictures are not binding. We reserve the right to alter the equipment.