

GS4 series 1/2" up to 10"

Pneumatic control valve for the control of neutral and aggressive fluids at high operative pressures with integrated positioner

- Space saving screwed wafer type construction
- Compact version, low weight
- Quiet operation
- High dynamic because of small stroke
- Control of high differential pressures with small actuators
- Low energy consumption
- High Kvs-values
- Long lifetime also with cavitation operation

Technical Information

Design	screwed wafer-type design; further versions see data sheet 8021-GS1 and -GS3	
Nominal Sizes*	1" - 6"	
Nominal pressure acc. DIN 2401	2320 psi 1450 psi 580 psi	1" - 3" 4" - 6" 8" - 10"
Nominal pressure ANSI	ANSI 900 ANSI 600 ANSI 300	1" - 3" 4" - 6" 8" - 10"
Mounting position	Any mounting position for installation in horizontal pipes Not in rising pipes	
Fluid Temperature	-76°F up to +662°F **	
Ambient Temperature ***	-22°F up to +212°F	
Rangeability / Characteristic: digital positioner	40 : 1 linear / 80:1 equalpercentage	
Leakage	Disc pair STN2	
% from Cvs IEC 60534-4 EN 12266-1	< 0,002 IV E	
Specific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1	

* other Nominal Sizes on demand

** higher temperatures on demand

*** Please consider the temperature limitation of the positioner!

Kvs- and Cv-values see data sheet 8001.

Materials

Valve body	stainless steel 1.4571
Head section	stainless steel 1.4571
Diaphragm casing	aluminium, KTL-coated
Actuator springs	stainless steel 1.4310
Packing	carbon-filled PTFE (spring 1.4310)
Valve stem	stainless steel 1.4122 or 1.4571, roller burnished
Fixed disc	STN2-disc
Sliding disc	STN2-disc

*further materials such as hastelloy, duplex-steel, monell, titan, inconell, incoloy, 1.4539 etc. on request

Positioner

For technical information of our positioners please refer to the corresponding data sheets.



Accessories

- Bellow
- Stroke Sensor
- Positioner (Ex ib IIC T6)

differential pressure

Admissible differential pressures

For temperatures of up to 100°F (ANSI) / 250°F (PN)
with integrated digital positioner, Type 8049
also on-off valves and valves with other side-mounted positioner

For temperatures of 100°F for ANSI-ratings and 250°F for PN-ratings and above: obey application limits!

Actuator size	155 sqin			230 sqin		
	55	71	80	49	58	62
Supply pressure (psi)						
Size	max. admissible pressure in psi			max. admissible pressure in psi		
1"	2321	2321	2321	2321	2321	2321
2"	1668	2306	2321	2321	2321	2321
3"	885	1218	1349	1262	1479	1624
4"	566	769	856	798	943	1030
6"	276	377	421	392	464	508
8"	160	225	247	232	268	290
10"	100	139	152	144	167	181
Spring configuration	Code L	Code „-“	Code P	Code L	Code „-“	Code P

Standard

differential pressure

Application limitations for GS4 valves in stainless steel

These pressure must not be exceeded for GS-valves from the GS4-series made of stainless steel, even though the actuator power might allow it.

PN160

Size	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1"	2320	2130	1840	1670	1515	-	1450	1340	1145	1050	945	885
2"	2320	2130	1840	1670	1515	-	1450	1340	1145	1050	945	885
3"	2320	2130	1840	1670	1515	-	1405	1390	1380	1365	1335	1275

PN100

DN	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1"	1450	1340	1145	1050	945	-	1450	1340	1145	1050	945	885
2"	1450	1340	1145	1050	945	-	1450	1340	1145	1050	945	885
3"	1450	1340	1145	1050	945	-	1405	1390	1380	1365	1335	1275
4"	1450	1340	1145	1050	945	-	1450	1335	1145	1045	945	885
6"	1450	1340	1145	1050	945	-	955	520	450	405	375	350

PN40

DN	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
8"	580	520	450	405	375	-	550	520	450	405	375	350
10"	580	520	450	405	375	-	335	335	335	275	245	205

ANSI 900 (ASME B16.34 - 316L)*

DN	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1"	1925	1780	1665	1565	1485	-	1925	1780	1665	1565	1485	1420
2"	1925	1780	1665	1565	1485	-	1925	1780	1665	1565	1485	1420
3"	1925	1780	1665	1565	1485	-	1925,0	1780,0	1665,0	1565,0	1485,0	1420,0

*: ASME B16.34 rating depends on the valve body material. Other materials and ratings on demand.

ANSI 600 (ASME B16.34 - 316L)*

DN	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
4"	910	845	795	755	740	-	910	845	795	755	740	720
6"	910	845	795	755	740	-	910,0	520,0	450,0	405,0	375,0	350,0

*: ASME B16.34 rating depends on the valve body material. Other materials and ratings on demand.

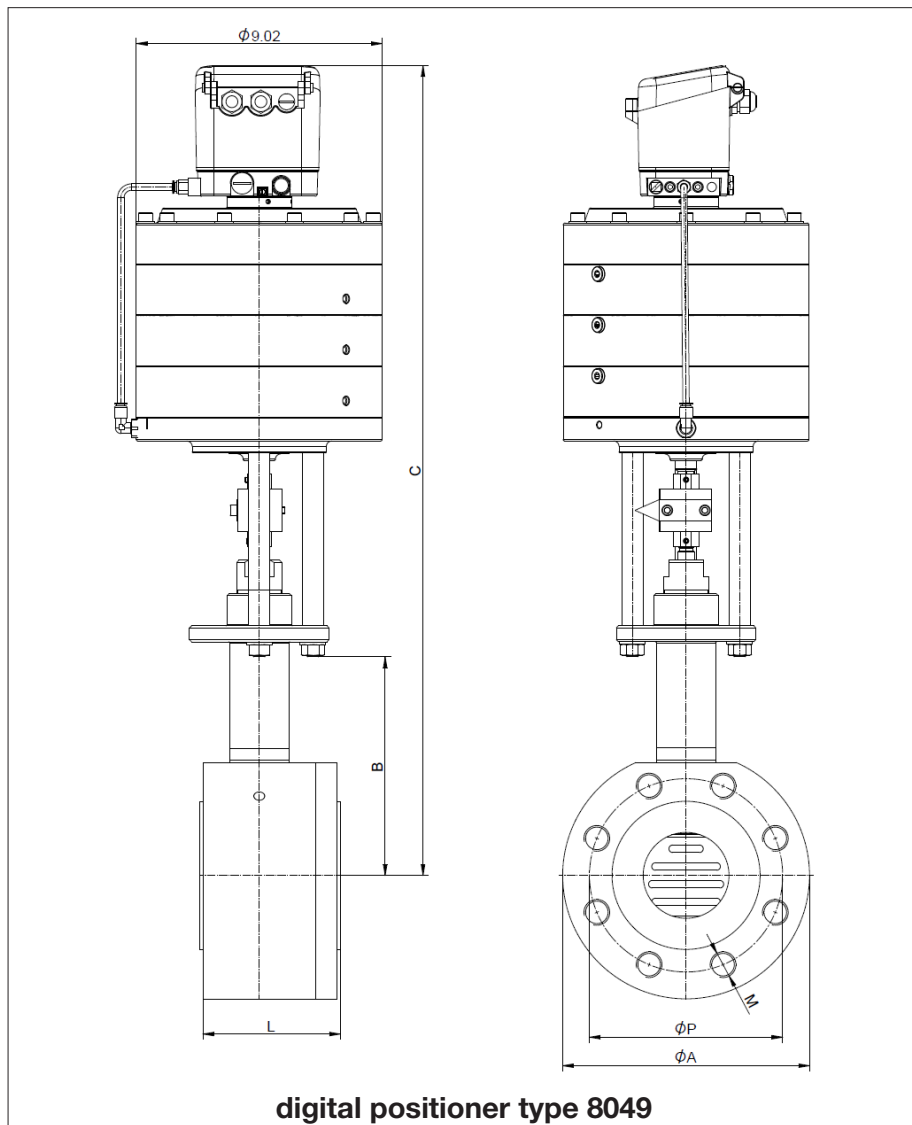
ANSI 300 (ASME B16.34 - 316L)*

DN	Sliding unit: SFC - stainless steel, coated maximum pressures for GS4-valves (psi)						Sliding unit: STN2 maximum pressures for GS4-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
8"	455	425	400	380	370	-	455,0	425,0	400,0	380,0	370,0	350,0
10"	455	425	400	380	370	-	335,0	335,0	335,0	275,0	245,0	205,0

*: ASME B16.34 rating depends on the valve body material. Other materials and ratings on demand.

with integrated digital positioner, Type 8049

Dimensions and Weights



size	ØA	B	C		pressure rating	ØP	number of screws	M	L	stroke	Weight for actuators [lbs]	
			for actuators 160 in ²	240 in ²							160 in ²	240 in ²
1"	5.31	6.4	28.15	-	PN160	3.94	4	M16	3.27	0.24	72.8	-
	5.91	6.4	28.15	-	ANSI900	4	4	7/8"-9 UNC	4.02		77.2	-
2"	7.32	6.54	28.35	-	PN160	5.71	4	M24	3.62	0.31	88.2	-
	8.46	6.54	29.92	-	ANSI900	6.5	8	7/8"-9 UNC	4.88		116.8	-
3"	9.06	8.01	29.72	-	PN160	7.09	8	M24	5.16	0.31	132.3	-
	9.45	8.01	29.72	-	ANSI900	7.5	8	7/8"-9 UNC	6.5		154.3	-
4"	10.24	8.6	30.31	34.06	PN100	8.27	8	M27	5.98	0.33	165.3	180.8
	10.83	8.6	30.31	34.06	ANSI600	8.5	8	7/8"-9 UNC	7.64		209.4	224.9
6"	14.76	12.72	34.45	38.19	PN100	11.42	12	M30	7.64	0.33	341.7	357.1
	14.76	12.72	34.45	38.19	ANSI600	11.5	12	1"-8 UNC	9.02		458.6	474
8"	16.54	13.54	35.24	38.98	PN40	12.6	12	M27	5.75	0.33	319.7	335.1
	16.54	13.54	35.24	38.98	ANSI300	13	12	7/8"-9 UNC	5.69		330.7	346.1
10"	17.72	14.21	36.02	39.76	PN40	15.16	12	M30	6.14	0.35	352.7	368.2
	17.72	14.21	36.02	39.76	ANSI300	15.25	12	1"-8 UNC	6.16		359.4	374.8

* face to face dimension acc. ANSI ISA 75.08.09-2015
Dimensions in inch

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	-
	eq. perc.	2	-	1.3	-	-	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-	-	-	-	-	-	-	-	-
	eq. perc.	9.3	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2"	(mod.) lin.	30	19	13	8.1	-	-	-	-	-	-	-	-	-
	eq. perc.	13	9.9	-	3.2	-	-	-	-	-	-	-	-	-
2"	(mod.) linear	52	32	23	14	12	-	-	-	-	-	-	-	-
	eq. perc.	22	14	-	-	-	-	-	-	-	-	-	-	-
2 1/2"	(mod.) linear	60	41	-	17	-	-	-	-	-	-	-	-	-
	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.	-	-	-	-	-	-	-	-	-	-	-	-	-
10"	(mod.) linear	1056	-	-	-	-	-	-	-	-	-	-	-	-
	eq.perc.	-	-	-	-	-	-	-	-	-	-	-	-	-