

Control Valve 8043-GS3

with integrated positioner

GS 3 series 1/2" up to 4"



Pneumatic control valve for control and switching of neutral through to highly aggressive media in process engineering, chemical industry and for plant equipment.

- Integrated positioner
- Lowest possible weight
- Fast response
- High Cv-values
- Tight shut-off
- Lower cost piston actuator

Technical Information

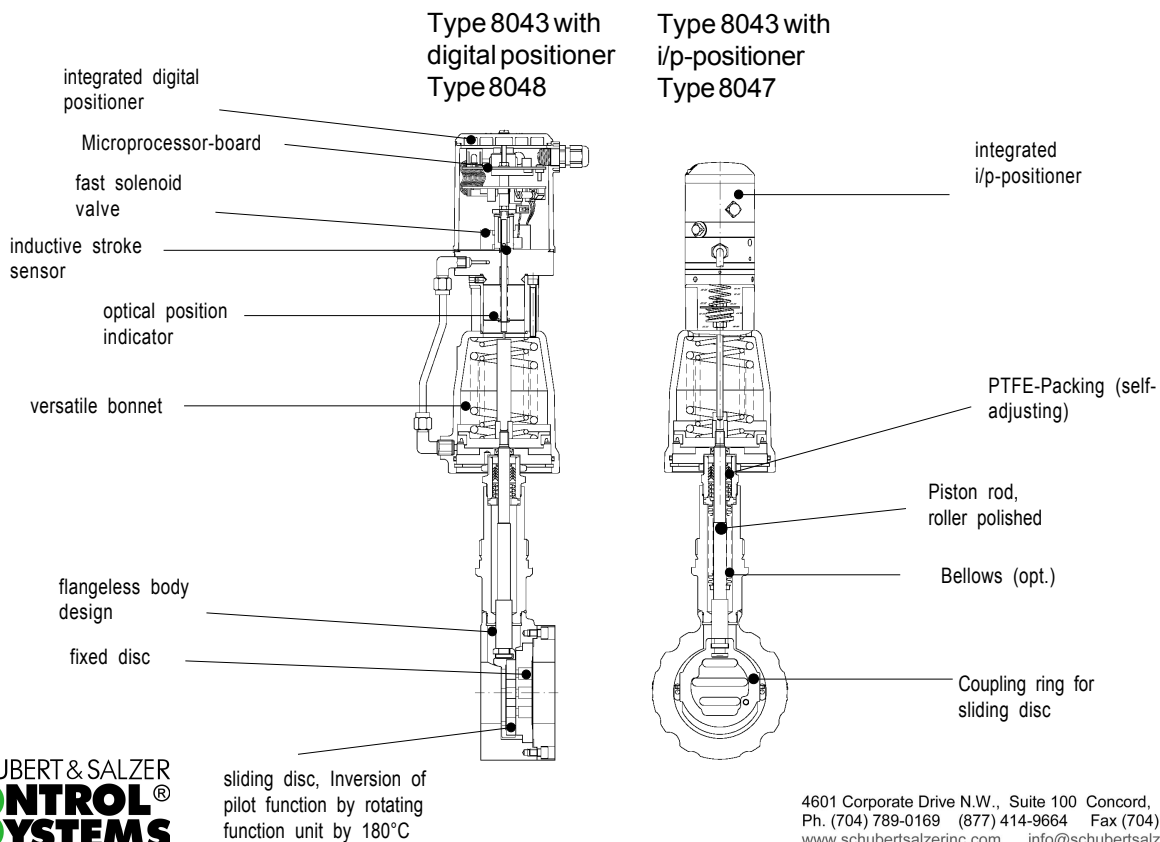
Design	ANSI flange wafer (self-aligning)	
Nominal Sizes	1/2" up to 4"	
Nominal pressure acc. DIN 2401	PN 40 (fits also to PN 10-25)	1/2" - 4"
Nominal pressure acc. ANSI	ANSI 150	1/2" - 4"
	ANSI 300	1/2" - 4"
Fluid Temperature	-76°F up to +662°F	
Leakage Rate (% of Cv-value)	Carbon, FUY	STN2
	< 0,0001	< 0,001

C_{vs}-values see data sheet 8001.



Options

- Bellows (stainless steel)
- Position indicator
- External I/P-converter



Control Valve 8043-GS3

with integrated positioner



Pressure ratings

(For temperatures of up to 250°F)

p/p- and i/p-positioner

Carbon - stainless steel coated

DN	Actuator	max. differential pressure		min. pilot pressure
		control	on/off	
		(psi)	(psi)	(psi)
1/2"	3"	580	580	45 - 85
3/4"	3"	535	535	50 - 85
1"	3"	420	450	50 - 85
1 1/4"	3"	305	365	60 - 85
1 1/2"	3"	205	275	60 - 85
2"	3"	115	175	65 - 85
2 1/2"	3"	100	145	65 - 85
3"	3"	60	85	65 - 85
4"	3"	35	60	65 - 85

1/2"	5"	580	580	45 - 85
3/4"	5"	580	580	45 - 85
1"	5"	580	580	45 - 85
1 1/4"	5"	580	580	45 - 85
1 1/2"	5"	495	580	45 - 85
2"	5"	290	390	50 - 85
2 1/2"	5"	230	335	50 - 85
3"	5"	145	205	50 - 85
4"	5"	85	130	50 - 85

STN2

DN	Actuator	max. differential pressure		min. pilot pressure
		control	on/off	
		(psi)	(psi)	(bar)
1/2"	3"	405	435	50 - 85
3/4"	3"	275	335	60 - 85
1"	3"	190	245	60 - 85
1 1/4"	3"	130	190	60 - 85
1 1/2"	3"	80	115	60 - 85
2"	3"	45	75	65 - 85
2 1/2"	3"	35	60	65 - 85
3"	3"	-	-	-
4"	3"	-	-	-

1/2"	5"	580	580	45 - 85
3/4"	5"	580	580	45 - 85
1"	5"	435	550	45 - 85
1 1/4"	5"	305	405	45 - 85
1 1/2"	5"	190	275	45 - 85
2"	5"	100	160	50 - 85
2 1/2"	5"	85	130	50 - 85
3"	5"	50	75	50 - 85
4"	5"	30	45	50 - 85

digital positioner

Carbon - stainless steel coated

DN	Actuator	max. differential pressure	min. pilot pressure
		control, on/off	
		(psi)	(psi)
1/2"	3"	580	50 - 85
3/4"	3"	580	50 - 85
1"	3"	580	50 - 85
1 1/4"	3"	580	60 - 85
1 1/2"	3"	435	60 - 85
2"	3"	275	65 - 85
2 1/2"	3"	230	65 - 85
3"	3"	145	75 - 85
4"	3"	85	75 - 85

1/2"	5"	580	45 - 85
3/4"	5"	580	45 - 85
1"	5"	580	45 - 85
1 1/4"	5"	580	45 - 85
1 1/2"	5"	580	45 - 85
2"	5"	580	50 - 85
2 1/2"	5"	535	50 - 85
3"	5"	335	60 - 85
4"	5"	205	60 - 85

STN2

DN	Actuator	max. differential pressure	min. pilot pressure
		control, on/off	
		(psi)	(psi)
1/2"	3"	580	50 - 85
3/4"	3"	535	60 - 85
1"	3"	390	60 - 85
1 1/4"	3"	290	65 - 85
1 1/2"	3"	190	65 - 85
2"	3"	115	75 - 85
2 1/2"	3"	85	75 - 85
3"	3"	50	75 - 85
4"	3"	30	75 - 85

1/2"	5"	580	45 - 85
3/4"	5"	580	45 - 85
1"	5"	580	45 - 85
1 1/4"	5"	580	50 - 85
1 1/2"	5"	390	50 - 85
2"	5"	260	60 - 85
2 1/2"	5"	220	60 - 85
3"	5"	130	60 - 85
4"	5"	80	60 - 85

Control Valve 8043-GS3

with integrated positioner



Positioner

	Digital positioner Type 8048	i/p-positioner Type 8047	p/p-positioner Type 8047
Input signal range	0/4 - 20 mA, 0/2 - 10 V	0/4 - 20 mA, 0/2 - 10 V	3 - 15 psi
Supply voltage, electrical	24 V DC, maximum 10 W	none	none
Supply air pressure	max. 87 psi	max. 87 psi	max. 87 psi
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	-4°F up to + 167°F	-4°F up to +140°F	-4°F up to +176°F
Protection class acc. DIN 40050	IP65	IP 54	IP 54
Ex-proof (Optional)	-	Ex II 2 G EEx ib IIC T6 up to 113°F Ex II 2 G EEx ib IIC T5 up to 140°F	-

*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.

Digital Positioner Type 8049

Version	4-wire	2-wire	AS-I
Set point signal	0/4 - 20 mA	4 - 20 mA	Single Slave, Slave Profil S - 7.3.4
Burden voltage	1,2 V	14 V	-
Supply energy, electrical	24 VDC	none	supply with AS-I
Adaption to range and zero	self-calibrating		
Configuration	with PC-Software		
Air capacity* to actuator	1.75 SCFM	varies with design	1.75 SCFM
System air consumption	none		
Ambient temperature limits	-4 to +167°F	-14 to +167°F	-4 to+167°F
Supply connection	NPT 1/8"		
Class of protection	IP 65		

* 90 psi supply air

Materials

Body	Stainless steel 316 Ti /318	Carbon steel ASTM A572, A216
Head section	Stainless steel 316 Ti /318	
Bonnet	Brass plated (actuator ø 2", ø 3") Aluminium corrosion proof (actuator ø 5")	
Springs	Stainless steel 304 (actuator ø 2", ø 3") Spring steel wire C, coated (actuator ø 5")	
Packing	PTFE (carbon filled), spring SST 301	
Actuating stem	Stainless steel, roller burnished	
Bellow	Stainless steel 316 Ti	
Fixed plate	Stainless steel 316 Ti, Stellite	
Sliding disc	Carbon material, FUY (1/2" up to 4"), SIC (1/2", 1", 1 1/2", 2")	
Coupling ring for discs	Stainless steel 318	
Optical position indicator	PA Trogamid (transparent)	

Control Valve 8043-GS3

with integrated positioner



Pressure - Temperature ratings for GS3 Valves

580 psi (PN 40)

DN	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 2 1/2"	580	550	510	465	405	350
3"	580	550	510	465	405	350
4"	480	450	420	390	365	350

DN	Sliding unit: carbon - STN2					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 2 1/2"	580	550	510	465	405	350
3"	520	495	480	375	320	275
4"	480	450	420	350	290	245

ANSI #150

DN	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 4"	230	220	190	175	145	125

DN	Sliding unit: carbon - STN2					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 4"	230	220	190	175	145	125

ANSI #300

DN	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 2 1/2"	580	550	510	480	450	435
3"	580	550	510	480	450	435
4"	480	450	420	390	365	350

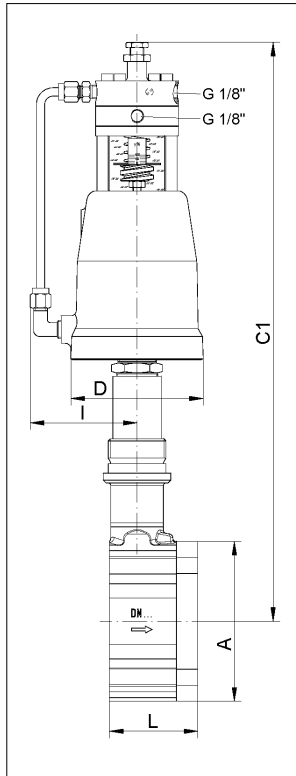
DN	Sliding unit: carbon - STN2					
	maximum pressures for GS3-valves (psi)					
	210 °F	300 °F	400 °F	480 °F	570 °F	660 °F
1/2" - 2 1/2"	580	550	510	480	450	435
3"	520	495	480	375	320	275
4"	480	450	420	350	290	245

Control Valve 8043-GS3

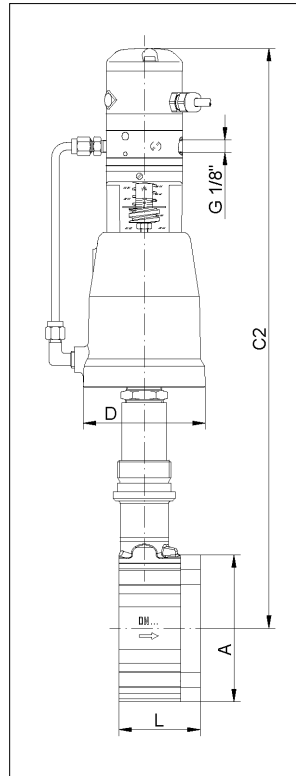
with integrated positioner



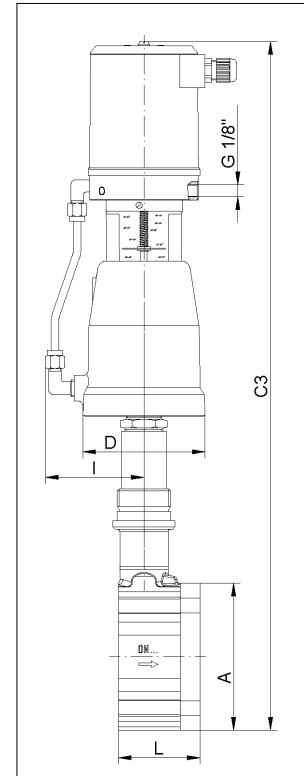
Dimensions and Weights



Type 8043 with p/p-positioner Type 8047 and with position indicator



Type 8043 with i/p-positioner Type 8047 and with position indicator



Type 8043 with digital positioner Type 8048 and with position indicator

DN	Actuator Ø	A	L	D	Type 8043 3"-actuator			I	Weight lb Type 8043
					C1	C2	C3		
1/2"	3"	2.5	2.2	3.85	15.45	16.9	18	3.15	13.2
3/4"	3"	2.85	2.2	3.85	15.65	17.1	18.2	3.15	13.9
1"	3"	3.25	2.2	3.85	15.85	17.3	18.4	3.15	14.3
1 1/4"	3"	3.5	2.2	3.85	16	17.45	18.55	3.15	14.5
1 1/2"	3"	3.9	2.2	3.85	16.2	17.65	18.75	3.15	15.4
2"	3"	4.55	2.5	3.85	16.55	18.05	19.15	3.15	18.7
2"	5"	4.55	2.5	5.75	17.75	19.2	20.3	4.15	22.7
2 1/2"	3"	5.45	2.7	3.85	16.95	18.45	19.55	3.15	22
2 1/2"	5"	5.45	2.7	5.75	18.15	19.6	20.7	4.15	26
3"	3"	6	2.75	3.85	17.3	18.75	19.85	3.15	24.6
3"	5"	6	2.75	5.75	18.45	19.9	21	4.15	28.6
4"	3"	7.25	2.95	3.85	17.8	19.25	20.35	3.15	31.9
4"	5"	7.25	2.95	5.75	19	20.45	21.55	4.15	35.6

Dimensions in inch

For positioner without optical position indicator: C1, C2 and C3 minus 1.9"

GS-Control Valve 8043-GS3

Flow Coefficients - Cv-Values



Ordering code		-	A	1	B	6	2	7	C	3	4	8	5	9
DN	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	-	0.05	-
	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	6.3	4.6	-	-	1.9	-	1.08	0.72	-	-	-	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	-	-									
	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	-										

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