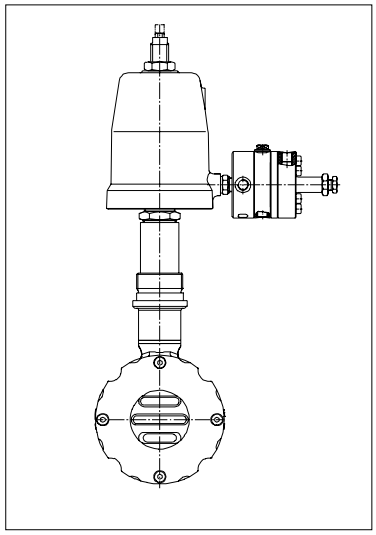
Pressure Controller 8042

GS 3 series DN 15 up to DN 150

SCHUBERT & SALZER CONTROL SYSTEMS

Pneumatic controller for continuous and discontinuous pressure control of gases and steam.



- High dynamic and control quality
- External or manual set point setting
- Compact and simple design of valve as wel as of controller
- Lowest possible weight

Technical Information

Valve

Body design	Flangeless, wafer-type construction, more versions see on data-sheet 8042-GS1	
Nominal sizes	DN 15 up to DN 150	
Nominal pressure acc. acc. DIN 2401	PN 40 (fitting for PN 10-25)	DN 15 - DN 150
Nominla pressure acc. ANSI	ANSI 150	DN 15 - DN 150
	ANSI 300	DN 15 - DN 150
Fluid temperature	carbon and stainless steel body -10°C up to +230°C	
Leakage rate	< 0,0001 % of Kvs-value	

Controller

Control pressure ranges	0,05 - 1 bar (remote operation) 0,5 - 6 bar (remote operation) 0,5 - 2,5 bar (manual operation)
Supply pressure	4 - 6 bar
Temperature range for diaphragm system	60 °C, maximum

Materials

Valve

Body	stainl.steel 1.4571 /1.4581	Carbon steel 1.0570 / 1.0619
Head section	stainl.steel 1.4571 /1.4581	
Bonnet	brass, chrome plated, for actuator 125 mm: aluminium, corrrosion protected	
Packing	PTFE, carbon filled	
Actuating stem	stainl.steel 1.4571, roller burnished	
Fixed disc	stainl.steel, hard-chrome plated	
Sliding disc	carbon material, impregnated	
coupling ring for sliding disc	stainl.steel 1.4581	

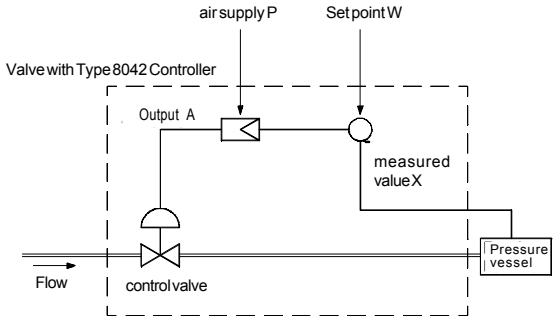
Controller

Body	brass, chrome plated

Pressure Controller 8042-GS3

Function

The steam or gas pressure from the installation (pressure chamber or pipe) is applied to the controller's diaphragm and compared to the set point signal. As a result of this comparison, supply air is either delivered to the actuator or exhausted. Consequently valve position and flow change, as well as the controlled pressure. The controller can be used for non-continuous processes with varying set points as well as for continuous pressure control (e.g. pressure reduction of steam). Examples can be found at the end of this brochure.

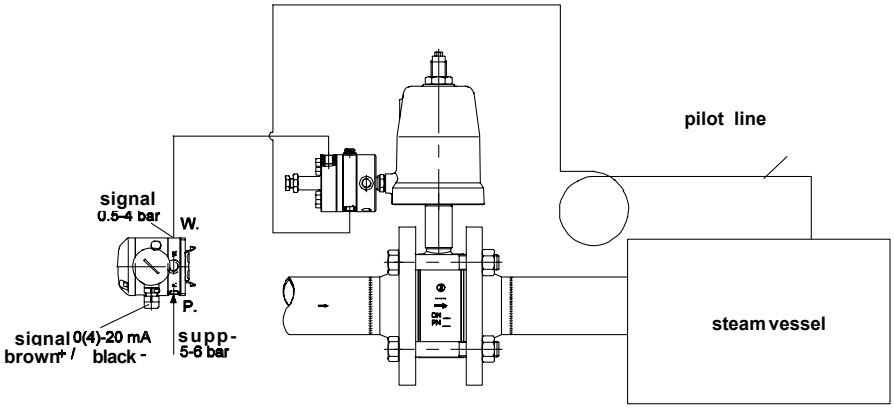


Remark: This proportional controller has a high internal gain and might not replace a conventional control loop with considerable dead times. Practical experience, however, indicates that many different pressure control loops can be handled with this system. To reduce the application risk prior to installation we recommend factory consultation, which is in any case worthwhile due to the potential cost reduction (no pressure gauge and process controller required).

Application Examples

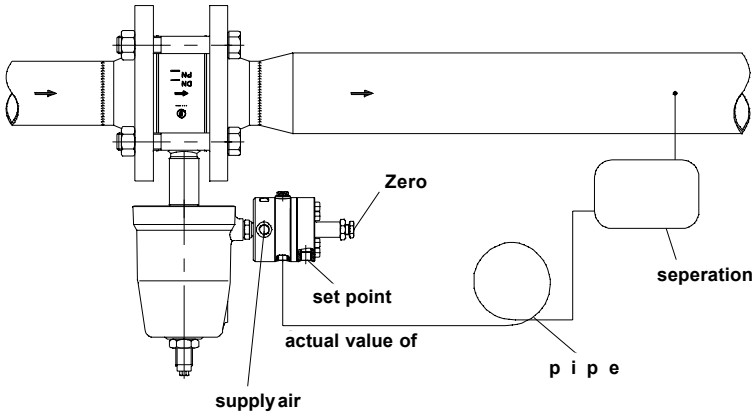
Pressure control in a closed chamber:

The pressure in a steam vessel is to be controlled in accordance with a varying set point signal, which is a current signal determined by the process controller (e.g. a CPS). This signal first is converted to a pressure signal by an i/p-converter and then fed to the pressure controller type 8042. The actual steam pressure is picked up via a pilot line which at the same time takes care of cooling down the medium before it gets into contact with the controller´s diaphragm system.



Steam pressure reduction in an energy supply line:

The pressure in a steam supply installation is to be maintained constant in spite of varying flow and upstream pressure. Due to the controller´s high dynamic the sketched solution can be used in case of rapidly and strongly changing flows.



Pressure Controller 8042-GS3

SCHUBERT & SALZER CONTROL SYSTEMS

Admissible Differential Pressure
(For temperatures of up to 120°C)

For temperatures of 120°C and above: obey application limits !

Disc-pair: Carbon - stainless steel coated

		max. differential pressures		Pst min.
DN	actuator	control	on/off	
15	80	25	37	5
20	80	22	33	5
25	80	19	28	5
32	80	16	24	5
40	80	14	22	5
50	80	10	16	5
65	80	6	9	5
80	80	4	6	5
100	80	2,5	3,5	5
50	125	24	36	4
65	125	14	21	4
80	125	9	13	4
100	125	6	9	4
125	125	4	6	4
150	125	3	4,5	4

Disc pair: STN 2

		max. differential pressures		Pst min.
DN	Actuator	control	on/off	
15	80	17	27	5
20	80	15	24	5
25	80	13	20	5
32	80	11	17	5
40	80	10	16	5
50	80	7	11	5
65	80	4	6	5
80	80	2,5	3,5	5
100	80	1,5	2	5
50	125	16	25	4
65	125	10	15	4
80	125	6	9	4
100	125	3,5	5	4
125	125	-	-	-
150	125	-	-	-

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

Pressure - Temperature ratings for GS3 valves

PN40

	Sliding unit: carbon - stainless steel, coated			
	max. admissible diff. pressures for GS3-valves			
DN	100°C	150°C	200°C	230°C
15 - 65	40	38	35	32
80	40	38	35	32
100	33	31	29	27
125	23	21	20	19
150	16	15	14	13

	Sliding unit: carbon - STN2			
	max. admissible diff. pressures for GS3-valves			
DN	100°C	150°C	200°C	230°C
15 - 65	40	38	35	32
80	36	34	33	26
100	33	31	29	24
125	22	21	20	16
150	16	15	14	11

ANSI #150

	Sliding unit: carbon - stainless steel, coated			
	maximum pressures for GS3-valves (bar)			
DN	100°C	150°C	200°C	230°C
15 - 125	16	15	13	12
150	16	15	13	12

	Sliding unit: carbon - STN2			
	maximum pressures for GS3-valves (bar)			
DN	100°C	150°C	200°C	230°C
15 - 125	16	15	13	12
150	16	15	13	11

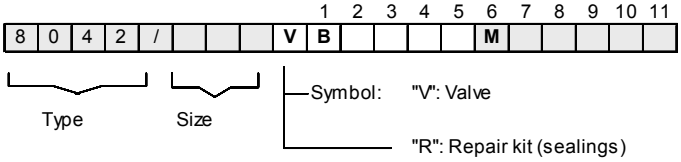
ANSI #300

	Sliding unit: carbon - stainless steel, coated			
	maximum pressures for GS3-valves (bar)			
DN	100°C	150°C	200°C	230°C
15 - 65	40	38	35	33
80	40	38	35	22
100	33	31	29	27
125	23	21	20	19
150	16	15	14	13

	Sliding unit: carbon - STN2			
	maximum pressures for GS3-valves (bar)			
DN	100°C	150°C	200°C	230°C
15 - 65	40	38	35	33
80	36	34	33	26
100	33	31	29	24
125	22	21	20	16
150	16	15	14	11

Pressure Controller 8042-GS3

Ordering Number System (valve including controller)



1 - 5 : Please quote all 5 sections.
6 - 11: Quote only if required.

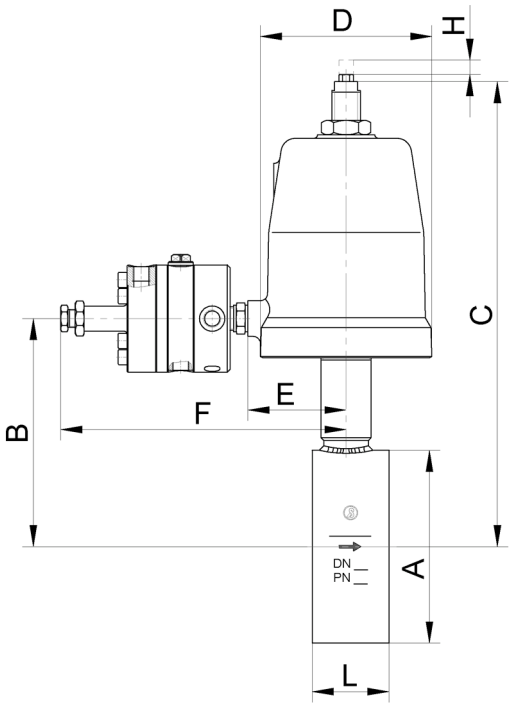
1. Function		2. Connection		3. Body material		4. Control functions		5. Actuator		6. Special versions	
B	GS pressure regulator type 8040 (long design)	E	GS3-flangeless design acc. ANSI 150	0	carbon steel 1.0570 / 1.0619	A	manually operated 0,5 - 2,5 bar	1	Piston 80 mm	M	Special versions
		F	GS3-flangeless design acc. ANSI 300	1	stainless steel 1.4571/1.4581	B	remote control 0,5 - 6 bar	2	Piston 125 mm	A	groove and groove acc. DIN 2512
		G	GS3-flangeless design acc. DIN PN10- PN40			C	remote control 0,05 - 1 bar			C	groove and tongue acc. DIN 2512
						D	manually operated 0,5 0,5 - 2,5 bar (spring opens, overflow valve)			E	2x lowered face acc. DIN2513
						X	without regulator			H	lowered and raised face acc. DIN 2513

7.		8.		9. Moving disc		10. Fixed plate		11. Kvs-values		12. Characteristic	
-	without siginificance	-	without significance	-	Carbon	-	stainless steel 1.4571, coated	-	100%	-	linear
				9	STN2-disc	1	STN2-disc	A	red. to 63%	1	equal percentage
								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%		
								6	red. to 20%		
								7	red. to 12%		
								8	red. to 2%		
								9	red. to 0,4%		

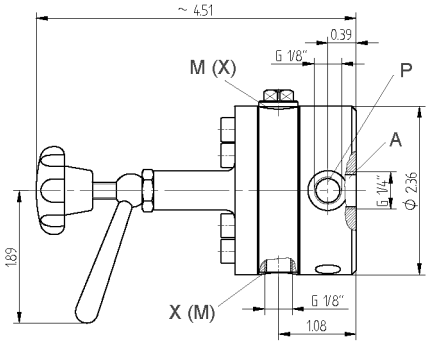
Ordering Example: 8042/025VBG1B1M - - - -2
GS-stop valve typ 8040, 1", GS3-flangeless design acc. DIN, body material stainless steel, remotely operated, pressure range 0,05 - 1 bar, piston 80 mm, C_v-value red. to 16%

Pressure Controller 8042-GS3

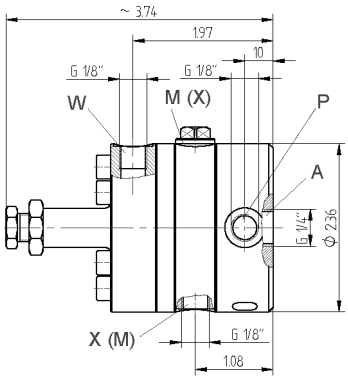
Dimensions and Weights



manually operated



remotely operated



Dimensions in mm

DN	A	8040 with 8042							Stroke
		B		C max		L	Weight kg		
		80	125	80	125		80	125	
15	64	182	185	315	335	56	5,4	6,8	6
20	72	187	190	320	340	56	5,6	7	6
25	82	193	196	325	345	56	5,9	7,3	6
32	89	197	200	330	350	56	6,1	7,5	6
40	99	202	205	335	355	56	6,4	7,8	6
50	116	212	215	350	370	64	7,9	9,3	8
65	138	222	225	355	375	68	9,4	10,8	8
80	153	230	233	365	385	70	10,6	12	8
100	184	243	246	380	400	75	13,8	15,2	8,5
125	212	255	268	390	410	80	16,1	17,5	8,5
150	242	270	273	405	425	80	19,9	21,3	8,5
200	302	298	301	433	453	93	36,8	38,2	8,5

Actuator mm	D	E
80	96	55
125	146	80

Dimensions in mm