

Series RSS/F Chemical Bellows Control Valve remote actuated



Keep for future use!

This operating manual must be strictly observed before transport, installation, operation and maintenance

Subject to change without notice.

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1 Technical data

Manufacturer :

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Designation :

Chemical bellows control valve, series RSS/F, with safety stuffing box and bellows as well as interchangeable seat and plug, actuated pneumatically or by electric motor.

Control characteristics to DIN EN 60534, equal percentage, linear, on-off, rangeability 25:1. V-plug, rangeability 100:1

Certified to Clean Air Act (TA-Luft)

Strength and tightness (P10, P11) of the pressure-bearing body tested to DIN EN 12266-1.

Gas-tight (P12) in the seat to DIN EN 12266-1, leak rate A

Face to face alternatively:

EN 558-1 basic series 1, ISO 5752 series 1 with flanges DIN EN 1092-2, type B (ISO 7005-2 Type B) PN 16 or flanges drilled to ASME B16.5 Class 150

- ANSI/ISA-75.08.09-2004, class 150 with flanges ASME B16.5 Class 150, raised face
- ANSI/ISA-75.08.09-2004, class 300 with flanges ASME B16.5 Class 300, raised face

Materials :

Body material: Ductile cast iron EN-JS 1049 to DIN EN 1563 (0.7043 DIN 1693) or ASTM A395

Lining material: PFA/PTFE .../F
 On request: antistatic .../F-L
 highly permeation-resistant .../F-P

Bellows: PTFE, modified PTFE, Hastelloy

Seat and plug: reinforced modified PTFE, at low Cv values also Hastelloy, tantalum

Design pressure :

PN 10 with standard PTFE bellows
 with heavy-duty PTFE bellows with PTFE/carbon support rings

PN 16 with heavy-duty PTFE bellows with stainless steel support rings
 with Hastelloy C bellows

See pressure-temperature diagram in [Section 1.4](#).

Sizes :

DN 15, 20, 25, 40, 50, 65, 80, 100 in mm
 ½", ¾", 1", 1½", 2", 3", 4" in inches, CI 150
 1", 1½", 2" in inches, CI 300 on request

Temperature range : -60 °C to 180 °C

See pressure-temperature diagram in [Section 1.4](#).

Installation position :

Normally in horizontal line with the actuator on top. See [Section 6.2](#).

The direction of flow is marked by an arrow cast into the body.

Dimensions and individual parts :

See sectional drawings in [Section 10](#).

Weight :

Nom. size		Weight ca. kg	
ISO	ASME	ISO	ASME
15	½"	6	6
20	¾"	6	6
25	1"	11	11
40	1½"	17	17
50	2"	19	19
65	--	20	--
80	3"	39	39
100	4"	44	44

For weight of actuator, see actuator manufacturer's manual.

Wear parts : Seat, plug, bellows

Options :

- ♦ Heavy-duty-PTFE-bellows (DN 25-100, 1"- 4")
 For permeating media and elevated pressures/temperatures
- ♦ Hastelloy C-bellows
 For special applications (e.g. extreme permeation)
- ♦ V-control plug for small Cv values
- ♦ Monitoring connection
 For higher safety requirements
- ♦ Actuator and actuator accessories

1.7 Valve travel

DN		Standard PTFE bellows			Heavy duty PTFE-bellows			Hastelloy bellows		
[mm]	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
15	1/2"	15	20					15	20	
20	3/4"	15	20					15	20	
25	1"	15	20		15			15	20	
40	1 1/2"	15	20	30	15	20		15	20	
50	2"	15	20	30	15	20		15	20	
65	--	15	20	30	15	20		15	20	
80	3"			30			30			30
100	4"			30			30			30

The valve travel depends on the actuator selected.

1.8 Opening and closing forces required

The values specified in the tables apply to a seat/plug material of modified PTFE.

With other materials, e.g. PTFE/carbon, higher closing forces are required. Please inquire at manufacturer's.

If the maximum Δp is $< p_2$, p_2 is used in the tables. observe the application limits acc. to the pressure-temperature diagram in **Section 1.4**.

- ♦ A **mechanical travel stop** is required in the area marked.

It is provided when

$\Delta p > 10\text{bar}/145\text{ psi}$	to	Seat-Ø 15-50 mm
$\Delta p > 6\text{ bar}/87\text{ psi}$	to	Seat-Ø $\geq 65\text{ mm}$

1.8.1 Standard bellows

Opening forces

The opening forces remain below the closing forces and are therefore not shown.

Closing forces

Seat Ø	maximum Δp or p_2 in bar									
	1	2	3	4	5	6	7	8	9	10
mm	N	N	N	N	N	N	N	N	N	N
290	290	310	330	350	370	390	410	430	450	470
330	290	310	330	350	370	390	410	430	450	470
390	330	385	435	490	540	595	645	695	750	800
450	390	460	525	595	665	730	800	865	935	1010
550	450	545	640	735	830	925	1020	1115	1205	1305
680	550	680	805	935	1065	1190	1320	1445	1575	1705
830	680	885	1085	1290	1490	1695	1895	2095	2300	2480
1040	830	1130	1425	1720	2020	2315	2610	2910	3205	3500
1300	1040	1500	1960	2420	2890	3350	3810	4270	4740	5190
1600	1300	1970	2630	3300	3960	4630	5300	5960	6630	7305
	1600	2520	3440	4370	5290	6210	7130	8050	8980	9900