

DIFFERENTIAL PRESSURE REGULATOR RRC-2

FUNCTION

Pressure regulators are designed to maintain set-up, constant pressure difference in process installations, which are connected in series to regulator's valve outlet. Regulators are adjusted to steam, liquids and inflammable gases.

CONSTRUCTION

Regulator comprises three main units:

- single-seated valve (1),
- actuator (2)
- adjuster set (3).

Diaphragm actuator can have the following effective diaphragm area: 100 cm², 160 cm², 320 cm², depending on the pressure difference required. Actuator is connected to the valve through adjuster set (which consists of a spring /s/ with spring spacers). Valve's and actuator's stems are sealed by means of elastic bellows made from stainless steel. The bellows do not require service during operation. Regulator's valve is closed on power failure.



PRINCIPLE OF OPERATION

Regulator RRC-2:

- higher pressure impulse (P⁺+) is applied to actuator chamber through adjuster set;
- lower pressure impulse (P⁻-) is applied to actuator outer chamber.

The spring tension should be such as to allow for equilibrium of forces, when pressure difference achieves its set-up value. If the set-up value is exceeded, equilibrium of forces gets disturb, which causes valve plug to open and flow rate through the valve to increase till the regulated pressure drops down to its set-up value.

NOTE:

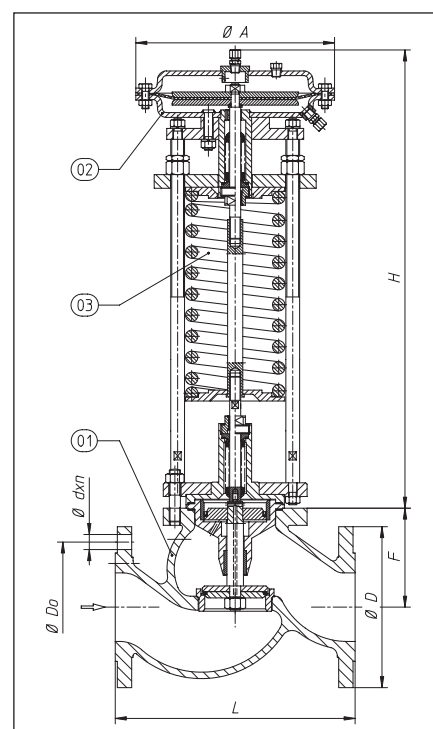
1. In order to avoid excess noise, it is recommended to maintain $p_r(abs) > \frac{1}{2} p_{zas}(abs)$.
2. Kvs values of regulators are selected by the manufacturer according to individual needs of Customer.
3. Please advise regulated pressure of the regulator while ordering, and the regulator will be set accordingly.

Pressure		
Nominal pressure	valve	PN40
	flanges	PN16/40
Max. fluid pressure		2,5 MPa
Proportionality range		Xp=16%

Medium	Max. fluid temp	Leakage class
air, gases	90°C	VI kl. wg. PN-EN 60534-4
water	130°C	VI kl. wg. PN-EN 60534-4
Steam	240°C	VI kl. wg. PN-EN 60534-4
„metal-metal” DN15-50	300°C	IV kl. wg. PN-EN 60534-4

MATERIALS

	Materials		Norm
Body	GP240GH	1.0619	PN-EN 10213-2
	GX5CrNiMo19-11-2	1.4408	PN-EN 10213-4
Bonnet	C15E	1.1141	PN-EN 10084
	X6CrNiTi18-10	1.4541	PN-EN 10088
Plug, Seat	X17CrNi16-2	1.4057	
	X6CrNiTi18-10	1.4541	
Elastic Bellow	X6CrNiMoTi17-12-2	1.4571	
Plug sealing	PTFE+ bronze		
	EPDM		
	NBR		
Diaphragm	EPDM with polyester insert		
	NBR with polyester insert		



DIMENSIONS

Regulator's Size DN		15	20	25	32	40	50	65	80	100	125	150	200
Max. coefficient Kvs ¹⁾		4	5	6,5	13,5	22	33	46	66	94	130	170	250
Dimensions [mm]	D [mm]	PN16 PN25-40	95 105	115	140	150	165	185	200	220 235	250 270	285 300	340 375
	L [mm]	PN 16-40	130	150	160	180	200	230	290	310	350	400	480 600
	D ₀ [mm]	PN16 PN25-40	65 75	85	100	110	125	145	160	180 190	210 220	240 250	295 320
	d [mm]	PN16 PN25-40	14 14	14	18	18	18	18	18	18 22	18 26	22 26	22 30
	n	PN16 PN25-40	4 4	4	4	4	4	4 8	8	8	8	8	12
	F [mm]		63	63	63	80	82	86	118	118	124	150	173 216
	Regulator's weight [kg]		18	20	30	33	38	41	49	58	75	110	157 220

1) Other Kvs coefficients available on request

SETTING RANGES OF REGULATED PRESSURE ²⁾

Actuator		Setting ranges [kPa]							
Area [cm²]	Ø A								
160	230	30-160	50-240	60-300	80-400	100-480	100-560		
320	290	10-40	15-80	30-160	50-280				80-375 100-550
Max. height [mm]	H	400						625	

2) Other setting ranges available on request

INSTALLATION

Regulator should be mounted on a horizontal pipeline with the spring facing downward. Direction of fluid flow must be as indicated on the regulator's valve body. It is recommended to install strainer type FS in front of the regulator. Regulators are equipped with impulse pipe connections, which are already fastened, and impulse pipes to be fastened. Additionally, steam regulators are equipped with condensers and connection stubs for the pipeline. Regulator is set at the regulated pressure required when supplied. Installation diagram on page 55.