

SELF-ACTUATING DIFFERENTIAL PRESSURE RELIEF REGULATORS **TYPE ZSG 7**

APPLICATIONS:

Regulators ZSG7 are used to control preset pressure difference in process installations connected to inlet of regulator valve. Increase in pressure difference causes valve closure. Regulators are applied in heating systems, in industrial processes with cold and hot (up to 150°C) water and non-flammable gases (up to 80°C), at nominal pressures up to PN25. Using with other media subject to consulting with manufacturer.

CHARACTERISTICS:

- compact and rigid design, small size,
- high control precision,
- wide range of flow ratios K_{vs},
- variety of end connections, easy installation,
- protected against hydraulic overloads,
- guaranteed internal and external tightness,
- · low-noise operation,
- high durability.

DESIGN:

Regulator comprises control valve (01) and hydraulic actuator (02), integrated in a single cast structural unit. Controlled value adjuster (03) is situated outside the actuator.

Valve - single-ported, with pressure balanced plug and tight closure. **Actuator** - diaphragm type, high strength diaphragm (effective area 40 cm²), protected against hydraulic overload.

End connections - welding, threaded or flanged end connections, as

per PN, DIN, ISO, for pressure PN16 or PN25, and CL150 (available execution with no end-connections).

OPERATING PRINCIPLE:

Regulator valve is open when no supply. Impulse of higher pressure from controlled pressure difference is transferred via impulse duct to actuator chamber, from valve side, and impulse of lower pressure difference – to actuator chamber from spring side. Increase in pressure above the preset value, set by tightening of spring in adjuster, causes pro rata closure of valve port until value of regulator pressure difference reaches the preset value.

VARIANTS:

ZSG 7.1 -	one permanent connection in higher and lower pressure impulse regulator,
ZSG 7.2 -	connection of two impulse ducts.

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ECHNICAL SPECIFIC	ATIONS:						
DN nominal diameter		15	20	25	32		
	full	3,6	5	7,2	10		
K _{vs} flow ratio [m³/h]	reduced	2,5 1,6 1	3,6 2,5 1,6	5,7 3,6 2,5	7,2 5,7 3,6		
		0,5 1		1,6 2,5			
Noise coefficient, Z		0,6		0,55	0,55		
Body connection diameter, d	J mm1	G 3/4	G I	G I I/4	40.4		
Pipe external diameter, d ₁ [mm]		21,3	20,9	33,7	42,4		
End external diameter, d ₂		R 1/2	K 3/4	R I	K I I/4		
wrench opening, 5		32	41	50	60		
		70	/5	08	105		
Body length		184	199	224	269		
	$L_2 [mm]$	136	151	164	195		
	L ₃ PN/CL [mm]	130 / 184	150 / 184	160 / 184	180 / 200		
Height	A [mm]	2/3	2/3	2/3	288		
Ø 118	-				- CANANA -		
- welding ends		- threaded er	nds	- flanged e	- flanged ends		
Nominal pressure: • body - PN25 • flanges - PN16; PN25; CL150 Allowable pressure drop: • in valve - 16 [bar] • in actuator - 16 [bar] Allowable medium temperature: • fluids - +150 [°C] • non-flammable gases - +80 [°C] Setting range: - 10100 [kPa] (green spring) - 10200 [kPa] (yellow spring) - 20. 400 [kPa] (red spring)							
eakage class ATERIALS ody, cover eat ug em ide sleeves ternal springs djuster springs aphragm	 Class VI a spheroidal iron steel K.O.X6Crl brass CuZn39P corrosion-proof X17CrNi16-2 (1 PTFE lined steet stainless spring spring steel C EPDM¹) with po 	s per PN-EN 605 EN-GJS-400-18L NiMoTi17-12-2 (1 b3 steel .4057) el steel 12R10 lyester fabric	34-4 T .4571)		• 03 • • • • • • • • • • • • • • • • • • •		
acking nd connections special NBR variant for oils	 – EPDM¹⁾ – weldable carbo or oily gases 	n steel S355J2G3	8 (1.0570)				

INSTALLATION:

Regulator is to be installed on horizontal pipeline, spring down. Medium flow direction is to conform to arrow on body. Application of mesh filters upstream regulator is recommended.

For low-noise operation medium flow velocity is not to exceed 3 m/s for liquids and 12 m/s for gases. Regulator design allows establishment of leaden seal on elements used for setting of preset value.



ACCESSORIES:

Regulator is delivered with respective couplings for impulse ducts (tubes) \emptyset 6x1. Additional, optional, accessories include connections to pipeline installation (e.g. counterflanges).

End connection type		DN15	DN20	DN25	DN32
Welding connection		8520144000	8520145000	8520146000	8520147000
Threaded connection		8520148000	8520149000	8520150000	8520151000
Flonged connection	PN16; PN25	8520136000	8520138000	8520140000	8520142000
Flangeu connection	CL150	8520137000	8520139000	8520141000	8520143000
Gasket (item 05)		8121795000	8121796000	8121797000	8121798000

ORDERING:

In your order specify product marking, DN nominal diameter, flow ratio K_{vs} , setting range and accessories.



EXAMPLE OF MARKING:

Differential pressure regulator type ZSG, permanent connection of higher pressure impulse, nominal diameter DN25; K_{vs} =3,6; setting range 20...400 [kPa], welding connections.

ZSG7.1-25-3,6-400-2