

Pressure Regulator HR 91

Characteristics

- ▶ Up to 100 mbar inlet pressure
- ▶ Up to DN 50
- ▶ Approved by German DVGW, Standard VP 200
- ▶ Protected against manipulation
- ▶ Test plug

Options

- ▶ Gas loss protection
- ▶ Test plug (single pipe ES)



▶ Pressure Regulator HR 91

Applications

The gas pressure regulators HR 91 are designed for residential and commercial applications.

Description

The HR 910 regulators are direct-acting spring loaded regulators with balanced valve. They can be fitted optionally with a gas loss protection (GMS) and meet the requirements of the German VP 200 code of practices.

As an increased safety against manipulation, the HR 91 design does not use screws.

Technical Data

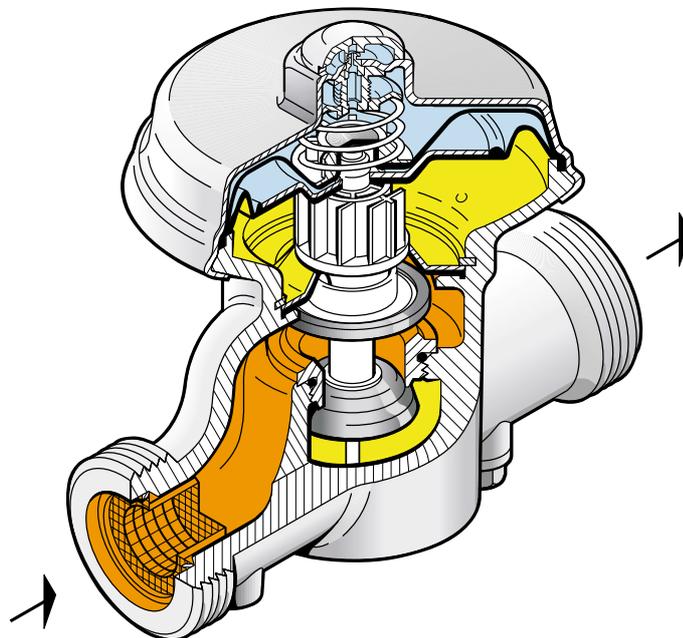
Pressure rate	PN 0.1
Acceptable gases	Natural gas, propane, butane, air, nitrogen and all non-corrosive gases
Assembling position	no restriction
Inlet pressure range (pe)	pa + 4 mbar to 100 mbar
Outlet pressure range (pa)	18 mbar to 50 mbar
Accuracy class	AC 10
Closing pressure group	SG 20
Ambient temperature	-20°C to +60°C
Flow rate	see table

Connection

Inline Version	DN 25, DN 32, DN 40, DN 50
Single Pipe Version	DN 25, DN 40, DN 50
Connection threads	acc. to ISO 228/1

Materials

Body regulator	GGG 40
Diaphragm housing	FAL sheet metal
Orifice / Internal parts	Brass
Body Fine strainer	Steel, zinc coated
Body Needle valve	Aluminium (AL Mg Si F28)
Diaphragm / Valve seat	NBR rubber
O-Ring / Seals	NBR rubber, Viton



Operating principle

After passing through a **strainer**, the gas expands across the seats to downstream pressure.

The gas regulator HR 91 is a **spring loaded** regulator which offers a fast reaction time. Its springs are carefully designed and aged to avoid excessive stress and prevent load reduction upon time. The setting ranges are colour coded.

The HR 91 regulators are fitted with a **safety diaphragm**, which prevents excessive leak in case of damage to the main diaphragm, but does not take over the regulation function in case of intervention.

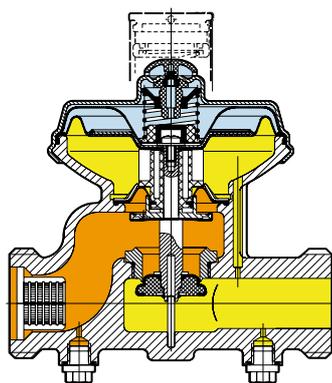
A G1/8 test nipple is a standard feature for the ZS version, and an optional feature for the ES version.

Optionally the HR 910 regulators can be delivered with a **gas loss protection** (GMS) compliant to VP 200.

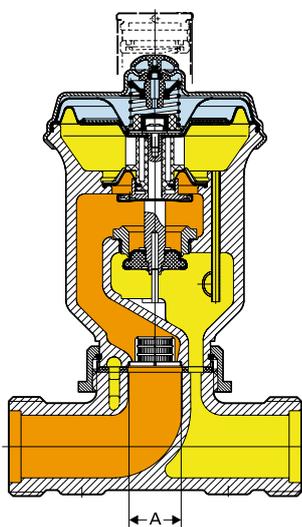
This device stops the gas flow as long as the outlet pressure is below its set point (around 50% of the outlet pressure set point).

The regulators sized DN25 and DN 32 are designed with a "**closed top casing**" in order to insure an optimal protection against manipulation.

The standard version – with short top casing can be set between **20 and 24 mbar**. All models can be also delivered with high top casing, which offers a set range from 18 to 50 mbar.



► HR 91 D



► HR 91E D

Capacity

Flow rate in m³/h natural gas in standard condition ($\rho_n = 0.78 \text{ kg/m}^3$)- pas = 22 mbar

pe	Inline Version			Single Pipe Version		
	DN 25/32	DN 40	DN 50	DN 25	DN 40	DN 50
26 mbar	10	35	41	8	31	38
30 mbar	14	40	53	10	38	44
40 mbar	20	60	66	14	56	56
50 mbar	25	66	80	16	63	69
60 mbar	31	73	94	19	69	81
70 mbar	35	79	106	23	75	94
80 mbar	38	85	119	25	81	106
90 mbar	40	94	131	28	85	119
100 mbar	44	104	135	30	91	125

Dimension

Inline Version

DN	Connection	C	D1	D2	E	F	Orifice	Weight
		mm	mm	mm	mm	mm	mm	kg
25	G 1 1/2"	140	108	128	35	108	25	2.0
32	G 2"	140	108	128	35	108	25	2.0
40	G 2 1/4"	210	-	181	45	196	40	6.3
50	G 2 3/4"	210	-	181	45	196	40	6.7

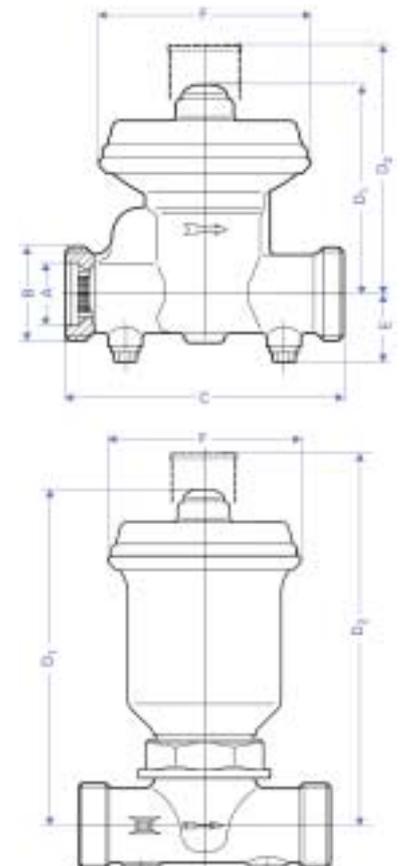
Single Pipe Version

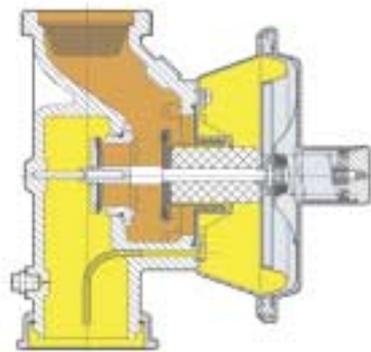
DN	Connection	C	D1	D2	E	F	Orifice	Weight
		mm	mm	mm	mm	mm	mm	kg
25	G 2"	-	193	213	-	108	25	2.3
40	G 2 3/4"	-	-	300	-	196	25	6.2
50	G 3 1/2"	-	-	320	-	196	40	6.6

Spring range, outlet pressure

Only for HR 91 with high spring housing

HR 91 DN 25 / 32			HR 91 DN 40 / 50		
Wh	Ref.-Nr.	colour	Wh	Ref.-Nr.	colour
12 - 20 mbar	052Z0071	green	17 - 25 mbar	052N0096	white
19 - 28 mbar	052Z0062	black	23 - 32 mbar	052N0093	yellow
25 - 36 mbar	052Z0064	brown	30 - 50 mbar	052N0094	raspberry coloured
28 - 50 mbar	052Z0065	red			





► HZR 91 DN 40 or
HZR 91 DN 50
on request

Ordering information

Size	DN
Assembling position	horizontal / vertical
Inlet pressure range	...mbar
Outlet pressure	...mbar
Gas loss protection (option)	with / without
Test plug	without / inlet side / outlet side
Conformity certificate (acc. 3.1B)	with / without

Accessories

Distance piece PSHR	to install HR 91 later
Screw fitting VSHR	connecting piece, Nut, seal
Seal FDR	conform to VP 401, free of asbestos