



HR 91

Residential Regulator

The HR 91 gas pressure regulator is designed for residential and commercial applications.

DESCRIPTION

The HR 91 model is a direct-acting spring-loaded regulator with a balanced valve. It can be fitted optionally with an optional gas loss protection (GMS) and meet the requirements of the German DIN 33822 code of practices. The HR 91 is designed without screws, in order to make it more tamper-resistant.

OPERATING PRINCIPLE

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

The HR 91 is **spring loaded** in order to ensure fast reaction times.

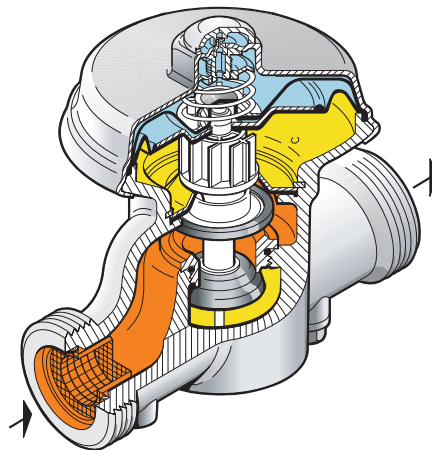
Its springs are carefully designed and aged to avoid excessive stress and prevent load reduction over time. Setting ranges are colour coded.

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

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

Optionally the HR 91 regulators can be delivered with a **gas loss protection** (GMS) compliant to DIN 33822.

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 provide optimal protection against tampering.

The standard version – with a low top casing can be set between **20 and 24 mbar**.

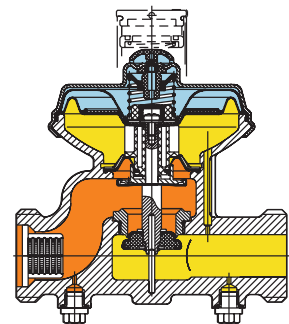
All models can be also delivered with high top casing, which offers a set range from 18 to 50 mbar.

KEY BENEFITS

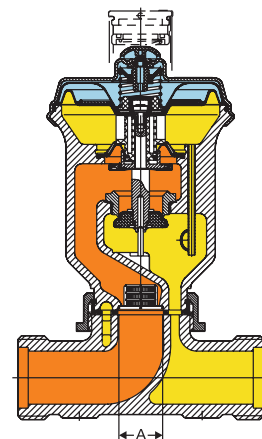
- » Up to 100 mbar inlet pressure
- » Up to DN 50
- » Approved by German DVGW, Standard DIN 33822
- » Tamper-proof
- » Test plug

Option

- » Gas loss protection
- » Test plug (on single pipe ES)



HR 91 D



HR 91E D

Technical Specifications

Pressure rate	PN 0.1
Acceptable gases	Natural gas, propane, butane, air, nitrogen and all non-corrosive gases
Assembly position	Unrestricted
Inlet pressure range (pu)	pd + 4 mbar to 100 mbar
Outlet pressure range (pd)	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

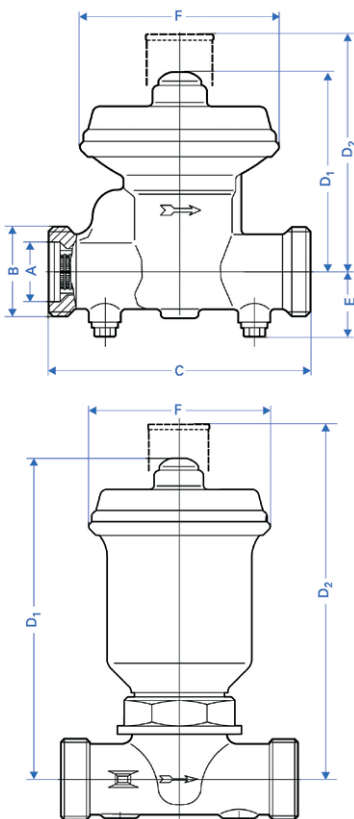
Materials

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

Capacity

Flow rate in m³/h for natural gas at standard conditions (pn = 0.78 kg/m³)- pds = 22 mbar

pu	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



Overall Dimensions

Inline Version

DN	Connection	C mm	D1 mm	D2 mm	E mm	F mm	Orifice mm	Weight 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 mm	D1 mm	D2 mm	E mm	F mm	Orifice mm	Weight 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

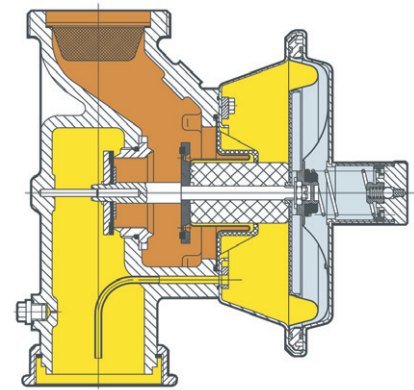
HR 91 DN 25 / 32			HR 91 DN 40 / 50		
Wds	Ref.-Nr.	colour	Wds	Ref.-Nr.	colour
12 - 20 mbar	052Z0071	green	17 - 25 mbar	052N0096	white
19 - 28 mbar	052Z0062	black	23 - 32 mbar	052N0093	yellow
25 - 36 mbar	052Z0064	brown	30 - 50 mbar	052N0094	raspberry
28 - 50 mbar	052Z0065	red	-	-	-

Ordering Information

Size	DN
Assembly 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	will be subsequently replaced by HR 91
Screw fitting VSHR	connecting piece, Nut, seal
Seal FDR	VP 401 compliant, asbestos-free



HZR...ZD

HZR 91 DN 40 or HZR 91 DN 50 on request



Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: www.itron.com

For more information, contact your local sales representative or agency:

ITRON GmbH

Hardeckstraße 2
D-76185 Karlsruhe
Germany

Phone: +49-721 5981 0

Fax: +49-721 5981 189