MR 50 PN 1

Gas Pressure Regulator
Inlet pressure 1 bar
DN 50



Applications

Pressure reduction for:
- District distribution
- Utilisation

Brief information

The MR 50 PN 1 gas pressure regulators are spring-loaded and fully inlet pressure balanced. The devices have a standard integrated safety shut-off valve offering over pressure slam shut and/or under pressure slam shut and an integrated limited capacity relief valve. They are members of the MR regulator family, which is known for excellent regulation and lock-up behaviour as well as easy maintenance. The MR series is used in industrial or commercial applications and small stations. The regulators are available in flanged and threaded versions.
The units are DVGW approved according to DIN 33822 as well as to Pressure Equipment Directive 97/23/EC (PED).
Registration Numbers: NG 4301CL0338 and CE 0085BQ5711

Technical data

- Inlet pressure range p_u: 50 mbar to 1 bar
- Outlet pressure range p_{ds}: 20 to 300 mbar (different setting springs necessary)
- Minimum differential pressure Δp_{min} 4 mbar

Ordering example

Gas pressure regulator MR 50 SF1 with over and under pressure shut-off valve (designation "S") and limited capacity relief valve:
- Inlet pressure ... to ... mbar
- Outlet pressure ... mbar
- Over pressure shut-off set ... mbar
- Under pressure shut-off set ... mbar
- Limited capacity relief valve set ... mbar

Pressure ranges & accuracy classes for outlet pressure and safety devices

Regulator			Safety shut-off valve				Relief valve	
Set range	Accuracy class	Lock up pressure class	Over pressure set range	Over pressure accuracy group	Under pressure set range	Under pressure accuracy group	Set range	Accuracy group
mbar	%	%	mbar	%	mbar	%	m b a r	%
p_{ds} 20 – 100 p_{ds} 100 – 300	AC 10 AC 5	SG 20 SG 10	p_{dso} 45 – 150 p_{dso} 150 – 470	AG_o 10 AG_o 5	p_{dsu} 6 – 13 p_{dsu} 13 – 120	AG_u 30 AG_u 10	20 – 120 above outlet pressure p_{ds}	10

Main features

- Fully inlet pressure balanced
- Size 50 mm
- Flange connection PN 16 or male thread G 2¾
- Inlet pressure resistant up to 16 bar
- Spring loaded
- Integrated safety shut-off valve (SSV) for over or over and under pressure shut-off
- Operation temperature -20 °C to +60 °C
- Integrated filter
- Firesafe according to DIN 33822

Options

- Savety diaphragm (F/G)
- Integrated limited capacity relief valve (F1/G1)
- External impulse
- SSV remote indication
- Spezial length 200 mm

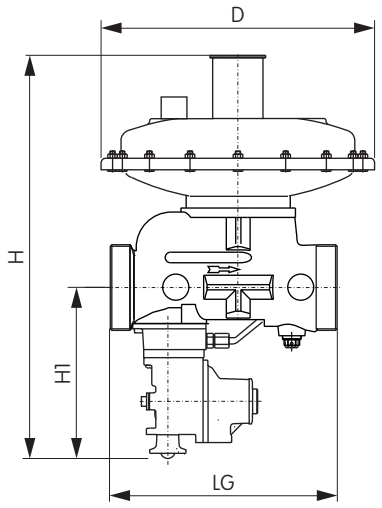
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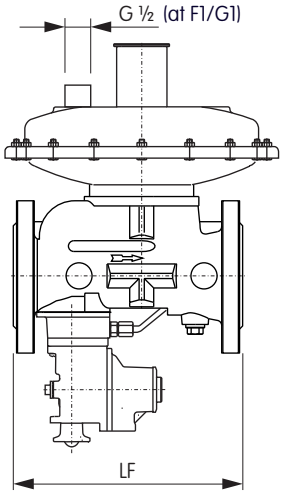
MR 50 PN 1: Gas Pressure Regulator, inlet pressure 1 bar, DN 50

Technical data and dimensions

	Capacities natural gas [stcm/h]			Connection			Dimensions [mm]				Weight
Typ	at Δp 4 mbar	$Q_{max, pu\ min}$	$Q_{max, pu\ max}$	Line	Flanges / Thread	LG	LF	H	H1	D	[kg]
MR 50 G(1)	28	62,5	430	DN 50	G 2 ¾	220	-	380	110	262	Approx. 9
MR 50 F(1)	28	62,5	430	DN 50	Flange PN 16	-	220	380	110	262	Approx. 13
MR 50 F(1)	28	62,5	430	DN 50	Flange PN 16	-	200	380	110	262	Approx. 13

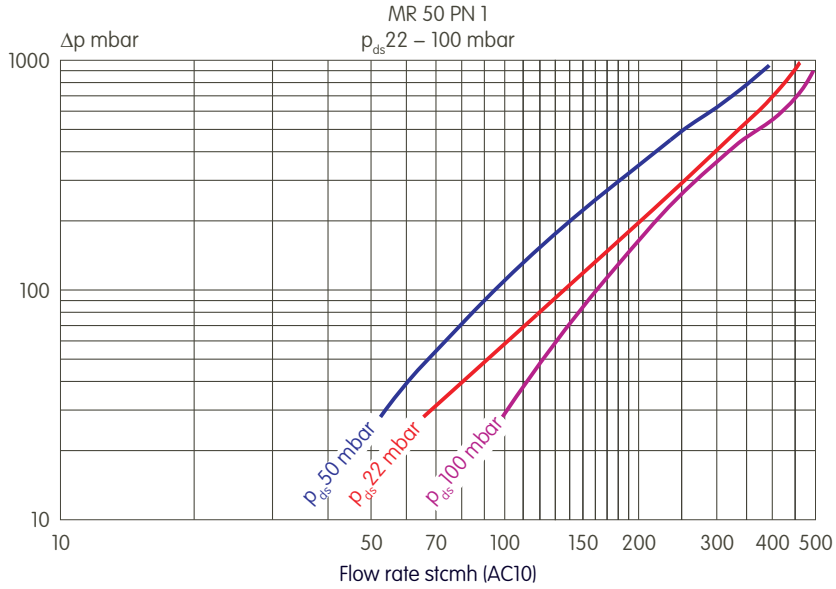
$Q_{max, pu\ min}$ maximum flow rate at minimum differential pressure Δp_{min}
$Q_{max, pu\ max}$ maximum flow rate at maximum differential pressure Δp_{max}
Flow rates ±20 %
Flange: EN 1092-2
Thread ISO 228-1

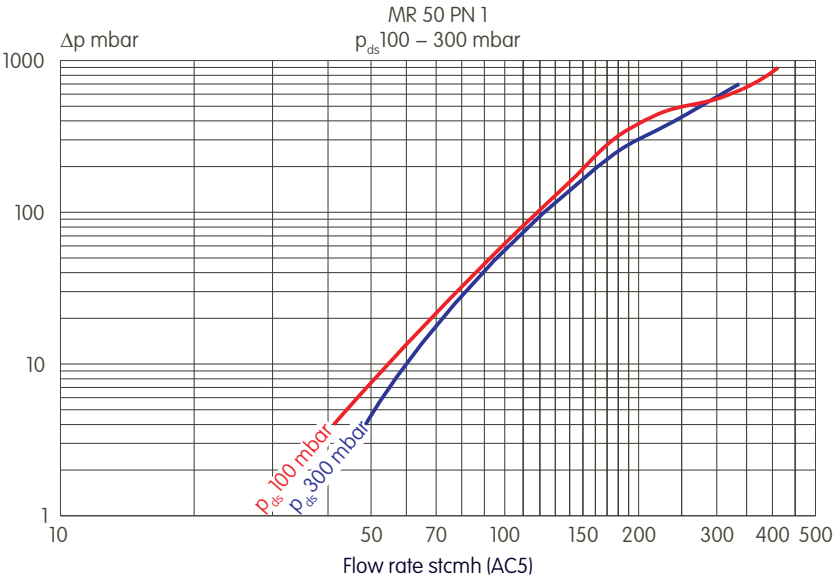




Horizontal installation of the gas regulator

Maximum capacity





These regulators are suitable for use with previously filtered, non-corrosive gases.

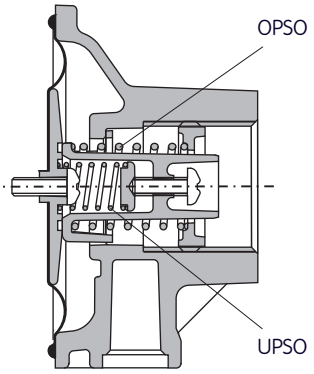
Material Specifications		
	Regulator	SSV
Body	Spheroidal graphite cast Iron: EN-GJS-400-15	Aluminium alloy
Covers	Sheet steel	Aluminium alloy
Valve seats (orifices)	Brass	Brass
Valve discs and "O" ring	Nitrile synthetic rubber	Nitrile synthetic rubber
Spindle	Aluminium alloy	Stainless steel
Diaphragms	Reinforced nitrile synthetic rubber	Nitrile synthetic rubber
Bearings	Moulded plastic (POM)	Moulded plastic (POM)
Loading springs	Carbon steel, zinc plated and passivated	Carbon steel, zinc plated and passivated

Spring ranges, outlet pressure regulator MR 50 F/G					
Order No.	33470063	73008990	73008991	73011389	73017238 incl. bearing ring
Set range	18 – 28	28 – 35	30 – 80	70 – 150	140 – 300
Colour	brown	blue	yellow	none	blue-grey

Spring ranges, outlet pressure regulator MR 50 F1/G1						
Order No.	73008997	73008994	73008991	73008999	73011389	73017238 incl. bearing ring
Set range	17 – 27	26 – 50	48 – 90	88 – 110	108 – 150	140 – 300
Colour	ochre brown	silver-grey	yellow	black	none-	blue-grey

Spring ranges SSV						
	OPSO					
Order No.	J12506-281	J12506-282	J12506-283	J12506-284	J12506-287	J12506-288
p_{dso}	18 – 60	50 – 80	60 – 110	100 – 210	200 – 350	280 – 500
Farbe	black	orange	red	dark geen	yelow	white

	UPSO		
Order No.	J12506-285	J12506-286	J12506-289
p_{dsu}	8 – 16	16 – 60	60 – 150
Colour	light blue	brown	purple



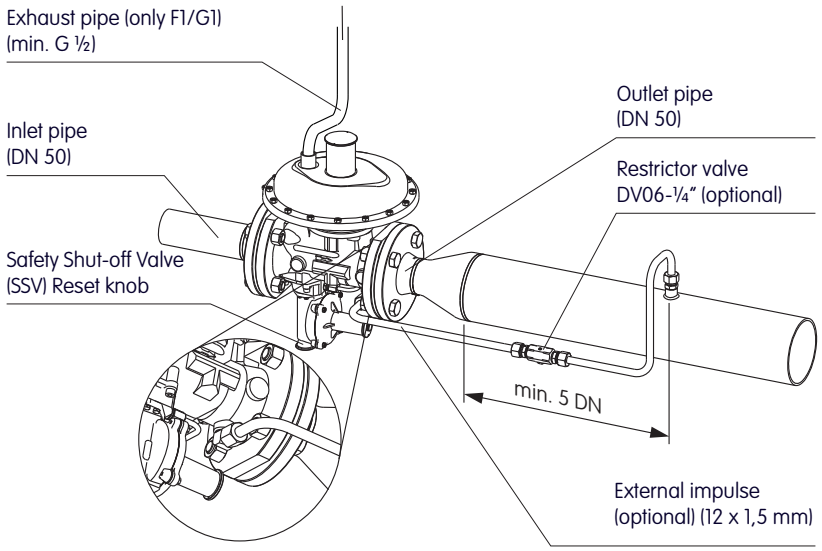
Spring ranges limited capacity relief valve			
Order No.	73012343	33470052	73010839
Regulator	set point in mbar above p_{ds}		
MR 50 (S)F1	6 – 40	16 – 54	40 – 120

Set points in mbar (horizontal installation of the regulator))

Accessories	
Order No.	Description
73019054	Restrictor DV06-¼"
73018966	Remote indicator
73020261	Soft spares kit MR 50 PN1 since 11 1998

Connecting patterns

Diameters for exhaust pipe	
Length	Min. line diameter
< 3 m	DN 15
3 – 5 m	DN 20
5 – 10 m	DN 25
> 10 m	DN 50



Installation

- Any installation position (horizontal, vertical, etc.) can be selected. The outlet pressure is factory set in the horizontal position (referring the position of the main diaphragm). In case of other installation positions, a subsequent adjustment may be required under certain circumstances.

- The devices of the MR 50 PN 1 series are generally equipped with an internal impulse tap. Optionally, an external impulse line can be connected in parallel to the internal impulse (please see the connection patterns above). This may be a required when using quick-acting solenoid valves or for switching capacities Q > 40% of Q_{max} or in the case of control oscillations.

- In case of oscillation in the installation, a separate damping valve DV06 ¼", can be installed in the line for the external impulse. (please observe connectin pattern above respectively the operating instructions).

- When connecting an external-impulse line, it is absolutely necessary (to ensure that the quality of regulation is maintained) that the downstream line has the same nominal size of the pipe, a minimum length of 5 x DN and consists of a straight piece of pipe. The external impulse can be connected either upstream or downstream of a possible expansion.

- Exhaust pipe for the gas pressure regulator (G ½) shall be sized and connected in accordance with the connecting pattern and shall be led out of the housing.

- It is recommended to install a gas filter upstream of the gas pressure regulator.

- In addition, it is necessary to install a valve each upstream and downstream of the gas pressure regulator.

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Vital Connections

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