

# Gas Pressure Regulator RMG 332



PRODUCT INFORMATION

**Serving the Gas Industry  
Worldwide**



# Gas Pressure Regulator RMG 332

## Application, Characteristics, Technical Data

### Application

- devices for the communal grid, power stations and industrial systems
- suitable for natural gas and all non-aggressive gaseous media

### Characteristics

- large inlet pressure range
- main valve design with pressure compensation
- with or without safety shut-off device (SAV)
- remote indication of SAV position optional
- easy to maintain due to interchangeable functional elements (plug-in modules)

TECHNICAL DATA						
max. inlet pressure $p_{e\max}$	16 bar					
permitted operating pressure $p_{zul}$	16 bar					
setpoint range $W_h$	0,010 to 3,5 bar					
setpoint range with RMG 610 (RS 10 d)	load limiting stage			regulating stage		
	RS 10d	set range $W_a$ [bar]	spring wire dia. [mm]	pilot type	set range $W_a$ [bar]	spring wire dia. [mm]
	measuring unit „M“	0,1 to 1,5	3,3	measuring unit „N“	0,010 - 0,040	2,5
					0,020 - 0,060	3,0
		0,5 to 5,0	4,7	measuring unit „N“	0,040 - 0,120	3,5
0,080 - 0,200					4,0	
0,100 - 0,500	5,0					
0,1 - 1,5	3,3	measuring unit „N“	0,1 - 1,5	3,3		
0,2 - 2,5	4,0		0,2 - 2,5	4,0		
0,3 - 3,5	4,5		0,3 - 3,5	4,5		
pipe size	DN 25 to DN 100		accuracy class (AC) and closing pressure category (SG)			
connection type	flanged to DIN PN 16 (acc. to DIN 2501)		für $p_a = 0,020$ bar to $< 0,050$ bar	AC 5	SG20	
			für $p_a = 0,050$ bar to $< 1,0$ bar	AC 5	SG10	
			für $p_a = 1,0$ bar to $3,5$ bar	AC 2,5	SG10	
flow media	natural gas, air, nitrogen, (other gases upon request)					
material	main valve body	Al alloy	accuracy class and closing pressure category	The closing pressure range depends on the pressure system, the upper limit being 0.5 to 3% of $q_{pe\max}$ of the respective valve seat diameter.		
	actuator casing	sheet steel				
	SAV pilot casing	Al alloy				
	internal components	St, Al, Ms				
	diaphragm	synth. rubber				
	seals	synth. rubber				
temperature range class II	- 15 °C to + 60 °C		function and strength	according to EN 334		
CE and DIN-DVGW	approved		min. pressure drop	$\Delta p$ 0.2 bar With a further drop of $p_e$ $p_a$ reduces whilst maintaining $\Delta p$ .		

ADJUSTMENT RANGE									
pipe size	control device	setpoint spring			overpressure cut-off *		underpressure cut-off *		actuating pressure category **
		No.	colour	wire dia. in mm	set range $W_{HO}$ (bar)	re-engagement diff. between actuating pressure and norm. operating pressure $\Delta p_O$ (bar)	set range $W_{HU}$ (bar)	re-engagement diff. between actuating pressure and norm. operating pressure $\Delta p_U$ (bar)	
									AG
DN 25 and DN 50	K1a	1	yellow	2,5	0,05 ... 0,10	0,03			10 / 5
		2	light red	3,2	0,08 ... 0,25	0,05			10 / 5
		3	dark red	3,6	0,20 ... 0,50	0,10			5 / 2,5
		4	white	4,8	0,40 ... 1,50	0,25			5 / 2,5
		5	yellow	1,1			0,010 ... 0,015	0,012	15
		6	white	1,2			0,014 ... 0,040	0,03	15 / 5
		7	black	1,4			0,035 ... 0,120	0,06	5
	K2a	2	light red	3,2	0,40 ... 0,80	0,02			10 / 5
		3	dark red	3,6	0,60 ... 1,60	0,03			10 / 5
		4	white	4,8	1,50 ... 4,50	0,06			5 / 2,5
		5	light blue	1,1			0,005 ... 0,020	0,01	15 / 5
		6	black	1,4			0,015 ... 0,060	0,02	5
DN 80 and DN 100	K4	2	light red	3,2	0,040 ... 0,100	0,020			5 / 2,5
		3	dark red	1,1	0,080 ... 0,250	0,030			2,5
		4	black	1,4	0,200 ... 0,500	0,060			2,5 / 1
		5	light blue	1,1			0,005 ... 0,020	0,010	15 / 5
		6	black	1,4			0,015 ... 0,060	0,020	5
	K5	3	dark red	3,6	0,2 ... 0,8	0,1			2,5
		4	black	4,5	0,6 ... 1,5	0,2			2,5 / 1
		5	light blue	1,1			0,015 ... 0,050	0,030	15 / 5
		6	black	1,4			0,040 ... 0,120	0,060	5
	K6	3	dark red	3,6	0,6 ... 2,0	0,2			2,5
		4	black	4,5	1,5 ... 4,5	0,4			2,5 / 1
5		light blue	1,1			0,040 ... 0,120	0,060	15 / 5	
6		black	1,4			0,120 ... 0,300	0,120	5	

\*) Note: Where control devices are being used simultaneously for overpressure and underpressure cut-off, the difference between the two setpoint values  $p_{SO}$  and  $p_{SU}$  must be at least 10% greater than the sum of the values given for  $\Delta p_O$  and  $\Delta p_U$ .

$$p_{SO} - p_{SU} \geq 1,1 (\Delta p_O + \Delta p_U)$$

\*\*) The higher AG group applies to the first half, the lower AG group to the second half of the setpoint range.

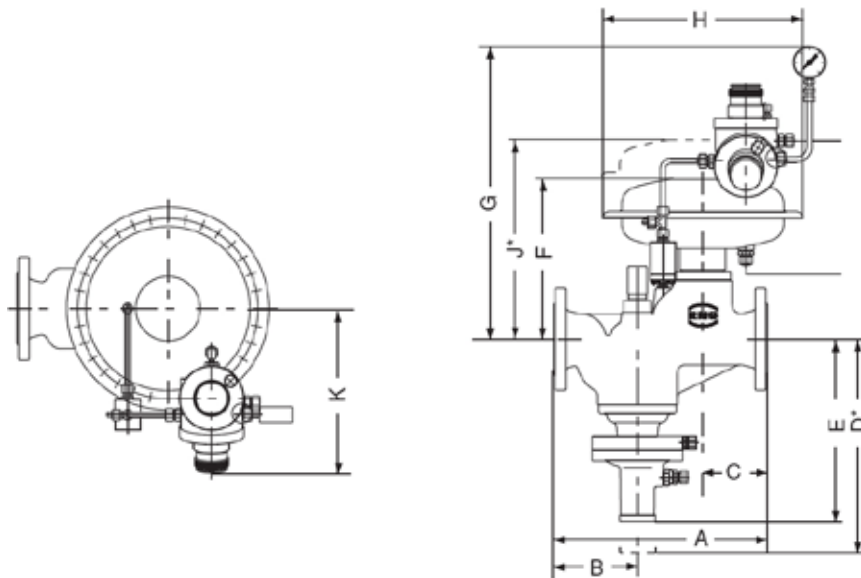
# Gas Pressure Regulator RMG 332

Application, Characteristics, Technical Data

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DEVICE PARAMETERS					
pipe size	valve seat diameter [mm]	K <sub>G</sub> -value in m <sup>3</sup> /h (for natural gas, ρ <sub>n</sub> = 0,83 kg/m <sup>3</sup> )	inlet pressure deviations Δ p <sub>e</sub> (max. inlet pressure p <sub>e</sub> max in brackets)*		length [mm]
			actuator size 1	actuator size 2	
DN 25	20	200	16 (16)		200
	33	420	10 (16)		
DN 50	20	200	16 (16)		230
	33	500	10 (16)		
DN 80	25	400		16 (16)	420
	31	850		16 (16)	
	41	1400		16 (16)	
	50	1750		10 (16)	
DN 100	25	400		16 (16)	500
	31	850		16 (16)	
	41	1400		16 (16)	
	50	1750		10 (16)	
	60	3000		10 (16)	
	80	4200		6 (12)	
	100	4700		4 (8)	

\*) The inlet pressure may exceed the p<sub>e</sub>max figure stated in the table up to twice its value but not above the limit of the nominal pressure stage (value in parenthesis), where the operational inlet pressure changes Δ p<sub>e</sub> do not exceed the numerical value of the p<sub>e</sub>max figure.



DIMENSIONS IN MM															
pipe size	main valve			SSV		pilot with actuator									
	A	B	C	D	E	F	G	H	J	K	F	G	H	J	K
DN 25	200	66	66	305	225	280	480	300	380	245					
DN 50	230	77	77	305	225	280	480	300	380	245					
DN 80	420	165	130	450	360						315	520	400	445	300
DN 100	500	175	150	475	335						415	620	400	630	300

The gas pressure regulator is designed to keep the outlet pressure in the pipe system constant within given limits irrespective of changes in the gas consumption and/or changes of the inlet pressure. The gas pressure regulator RMG 332 consists of the main valve body and the functional elements „pilot“ and „safety shut-off device“. Both functional elements can easily be removed from the main valve body by loosening the respective connecting bolts (modular design). This allows replacing the functional element with a tested spare part unit for maintenance or in case of failure and move the necessary repair work away from the system into the workshop. The main valve of the control unit achieves pressure compensation through a diaphragm and can be fitted with different valve seat diameters. Various actuator sizes are available.

For regulating purposes a pilot with separately adjustable load limiting stage has been fitted. The pressure differential between inlet pressure  $p_e$  and outlet pressure  $p_a$  serves as booster energy for activating the actuator. The adjustable load limiting pressure allows for static amplification and adjusting the gas pressure regulator to the conditions prevalent in the regulating system.

A fine filter is fitted to protect the regulator from impurities. The outlet pressure  $p_a$  is supplied to the underside of the control diaphragm via the return line; changes in output pressure  $p_a$  thus directly affect the position of the main valve. The output pressure  $p_a$  to be regulated is supplied to the pilot via the measuring line.

The measuring diaphragm in the pilot stage captures and compares the actual outlet pressure value  $p_a$  with the outlet pressure setpoint value  $p_a$  preset by the adjustable setpoint spring. Based on this comparison the main valve position is altered through pressure changes in case of a pressure differential, resulting in the alignment of the outlet pressure  $p_a$  (actual value) to the setpoint value. At zero consumption the gas pressure regulator shuts off tight.

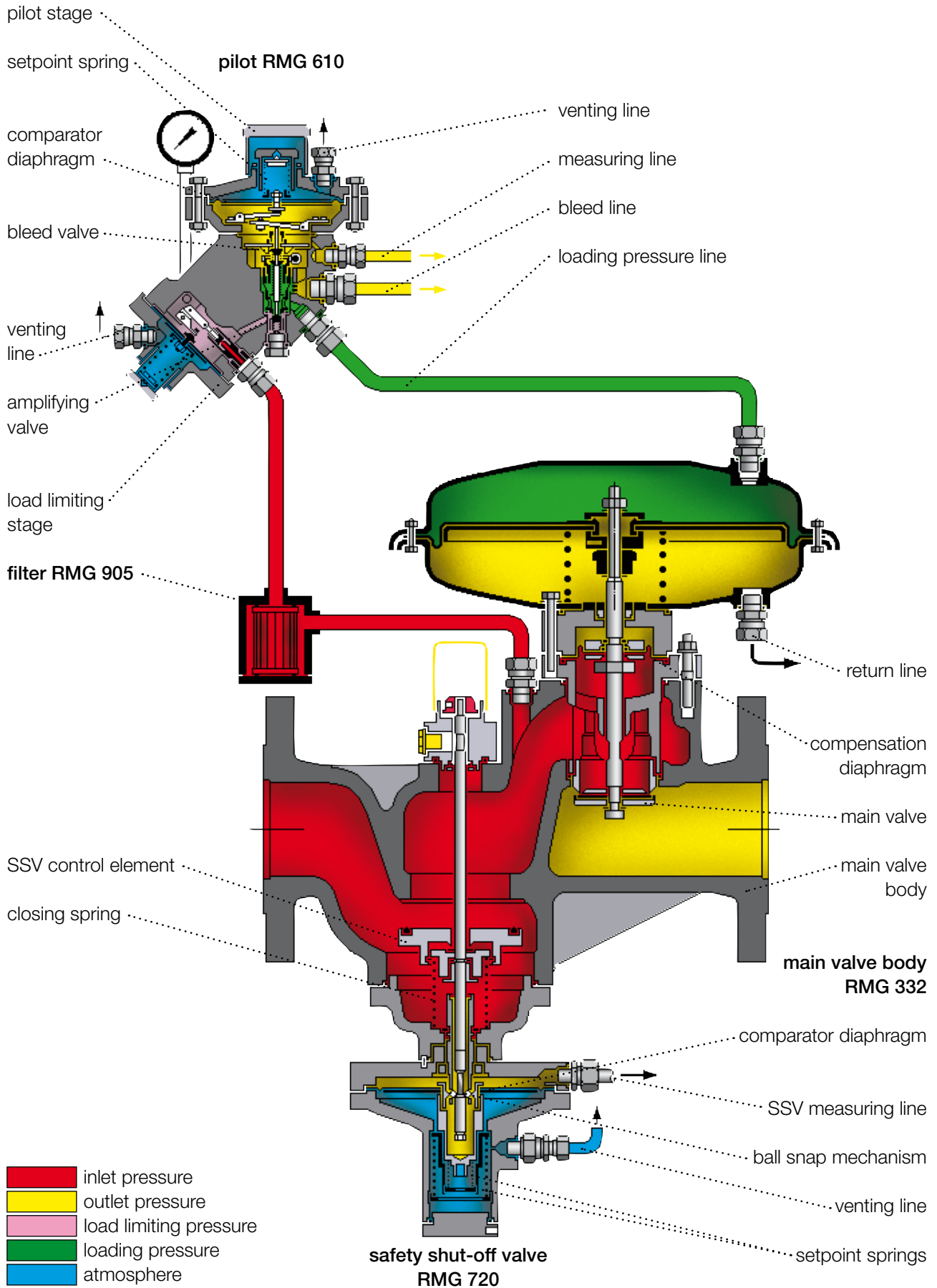
For the electrical remote indication of the „OPEN/CLOSED“ position of the SSV valve a proximity switch can be fitted upon request. The outlet pressure to be regulated is fed to the control unit via the SSV measuring line. The measuring diaphragm captures and compares the outlet pressure  $p_a$  with the adjustable preset setpoint values  $p_{SO}$  and  $p_{SU}$ . When the overpressure or underpressure actuation point is reached in the outlet line system, the measuring diaphragm and the switching bush move into the upper or lower release position, the ball mechanism releases the switching rod, and the SSV main valve closes.

The SSV can only be reset by hand. To do so, unscrew the control unit cover, rotate it by 180 degree and screw it back onto the switching rod, until pressure compensation at the SSV valve plate is effected. Then pull back the switching rod together with the cover, and tension the closing spring. From nominal width DN 80 onwards the reloading is achieved by pressing the reload button of the switching rod. The switching rod can only be reloaded if the pressure to be monitored has been lowered or raised after switching off by a given minimum value of the smallest difference between the actuation pressure and the normal operating pressure.

# Gas Pressure Regulator RMG 332

Design and Operation

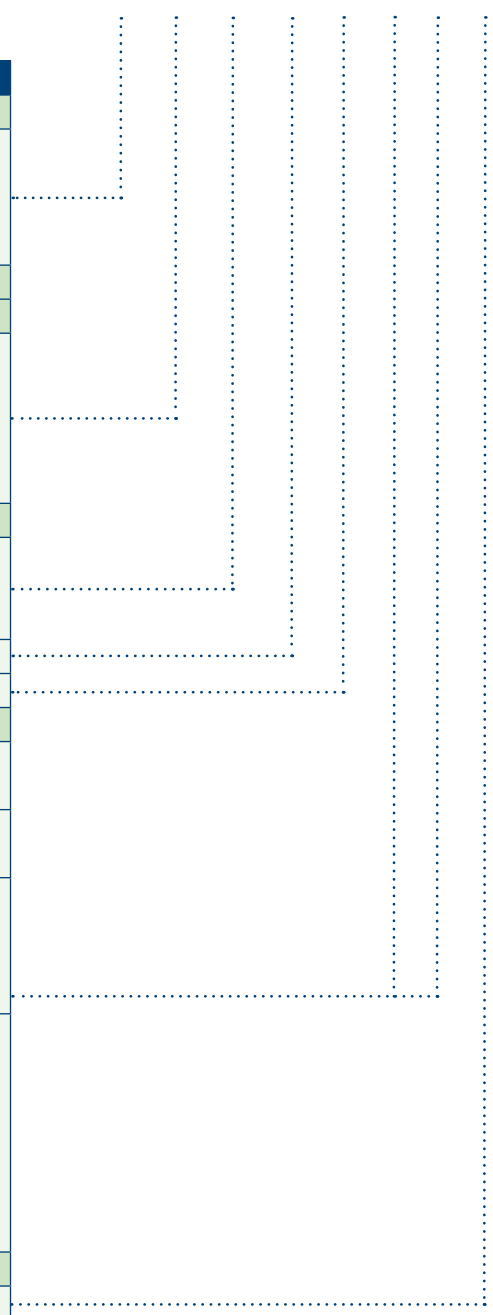
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example:

RMG 332 25 - K1 / E1 / HA / F - 20 / 1 / So

TYPE DESCRIPTION			
<b>pipe size</b>			
DN 25			25
DN 50			50
DN 80			80
DN 100			100
<b>SSV-control unit</b>			
	<b>overpressure</b>	<b>underpressure</b>	
K1a	0,050 ... 1,500	0,010 ... 0,120	K1a
K2a	0,400 ... 4,500	0,060 ... 0,400	K2a
K4	0,040 ... 0,500	0,005 ... 0,060	K4
K5	0,200 ... 1,500	0,015 ... 0,120	K5
K6	0,600 ... 4,500	0,040 ... 0,300	K6
<b>actuation</b>			
<b>actuation with:</b>			
current supply			E1
current failure			E2
<b>SSV manual release</b>			HA
<b>Electrical remote indication of SSV valve position</b>			F
<b>valve seat diameter regulating unit</b>			
DN 25	20	1	
	33	1	
DN 50	20	1	
	33	1	
DN 80	25	2	
	31	2	
	41	2	
	50	2	
DN 100	25	2	
	31	2	
	41	2	
	50	2	
	60	2	
	80	2	
	100	2	
<b>special version</b>			
<b>special version (to be described in detail)</b>			So



### **For More Information**

To learn more about RMG's Advanced Gas Solutions, contact your RMG account manager or visit [www.rmg.com](http://www.rmg.com)

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