

# MEDENUS

Gas Pressure Regulation



General Catalogue MEDENUS®

EN

### List of abbreviations and formula symbols

ATC	acceptance test certificate	$Q_n$	standard volumetric flow rate
BV	Vent valve	$Q_{\min}$	minimum volumetric flow rate
DN	nominal size	$Q_{\max}$	maximum volumetric flow rate
DVGW	Deutsche Vereinigung des Gas- und Wasserfaches e.V.	RE	Control Unit
f	conversion factor gases	RSS	switching valve
FPR	fluoro polymer rubber	RSD	throttle valve
HD	high-pressure	SSV	safety shut-off valve
HDS	high-pressure screw spindle	SRV	safety relief valve
$H_{s,n}$	calorific value	$t_{\text{Gas}}$	gas temperature
$K_G$	value	VA	stainless steel
$p_d$	outlet pressure	$w_d$	outlet gas velocity
$p_{ds, o, u}$	setpoint of the response pressure	$w_u$	inlet gas velocity
PS	maximum allowable pressure	$\rho_n$	gas density
$p_u$	inlet pressure	$\Delta p$	differential pressure

# TABLE OF CONTENTS

Precision and experience - "Your success is our motivation, daily" .....	4
Information regarding the catalogue.....	6
Technical Theory.....	8
Gas pressure regulator R 50.....	10
Gas pressure regulator R 51.....	12
Gas pressure regulator R 100.....	14
Rotary regulator R 100 U .....	16
Vacuum regulator R 100 UD .....	17
Gas pressure regulator R 101.....	18
Overflow valve R 101 U.....	20
Regulator for gas torches R 101 US .....	21
Gas pressure regulator with integrated safety shut off valve PS 8 bar RS 250 / RS 251.....	22
Gas pressure regulator with integrated safety shut off valve PS 16 bar RS 254 / RS 255.....	26
Safety shut-off valve S 50.....	30
Safety shut-off valve S 100.....	32
Safety relief valve SL 10 .....	34
Cellular gas filter DF 100 .....	36
Accessories .....	38
Flanged ball valves .....	40
Turbine Meter - Quantometer .....	42
Contact.....	46
Notice.....	48

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# YOU WANT TO STAY UP-TO-DATE WITH MEDENUS?

Do you want to be kept up-to-date with the very latest news from MEDENUS? If so go to our website and register for our newsletter at [medenus.de/en/newsletter.html](https://medenus.de/en/newsletter.html). We will send you no more than two or three emails per year and you can easily unsubscribe at any time.



**Dipl.-Ing. Martin Clemens,**  
Managing Director



**Franz Feichtner,**  
Head of Sales & Marketing





## Precision and experience

Your success is our motivation, daily

Medenus was founded in 1972 by Mr Dieter Medenus, manufacturing gas pressure regulators, safety shut-off valves and safety relief valves.

We manufactured from the same facility in Rösrath near Cologne for more than 30 years and then in 2004 the production facility was moved to today's company headquarters in Olpe. In 2004 for the reasons of age, Mr Dieter Medenus handed over the running of the company to myself Mr Martin Clemens - Managing Director. From here we deliver our complete product range in proven Medenus quality with short delivery times and absolute adherence to delivery dates.

We have also extended our product range in the area of filtering in order to supply our customers with the entire gas pressure regulation technology from a single source.

(Dipl.-Ing. Martin Clemens)

Nowadays, in addition to high quality standards, a high degree of flexibility is also required.

Our customers, several of which have been with us for many years, value us highly because of our market-leading delivery and response times.

At MEDENUS®, customer orientation is not only a frequently used phrase, but is also lived daily by all employees, manifesting itself in the close relationship we have with our customers.

(Franz Feichtner)

# INFORMATION REGARDING THE CATALOGUE

Please observe the following information when using this catalogue.

## **Selecting the devices:**

For all devices, information is available on the correct selection of the products in question. If you require assistance in selecting a suitable product please get in-touch using the inquiry form at the back of this price list.



## **Special versions:**

If you cannot find a suitable product in our catalogue, please feel free to contact us. We manufacture a large number of customized products and may be able to help you find a solution for your problem.

## **Training courses:**

We offer both standard seminars in small groups of no more than 8 participants and customer-specific training courses.



## EXPRESS

You're in a hurry? We will be glad to help you!

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If you require your valve even quicker than our standard delivery times then please get in-touch. Once reviewed by our production team, we will advise what options are available. We will advise which possibilities we have.

# TECHNICAL THEORY

## Calculation of the required KV value

The standard flow rate value for a completely open actuator ( $p_u = 2 \text{ bar}$ ;  $p_d = 1 \text{ bar}$ ) corresponds to the  $K_G$ -value.

The  $K_G$  value refers to natural gas of density  $0.83 \text{ kg/m}^3$  at  $15^\circ \text{C}$ . For other gases, a flow rate equivalent to that of natural gas is to be expected.

$$Q_{n \text{ natural gas}} = Q_{n \text{ Gas}} / f$$

$$p_d / p_u > 1/2$$

$K_G$  value at a subcritical pressure ratio

$$K_G = Q_n / \sqrt{p_d \cdot (p_u - p_d)}$$

$$p_d / p_u \leq 1/2$$

$K_G$  value at a supercritical pressure ratio

$$K_G = 2 \cdot Q_n / p_u$$

Note: all calculated pressures are absolute pressures.

## Device selection

The device is selected on the basis of its  $K_G$ -value from the table of flow rate coefficients

Note: For spring-loaded devices, a capacity reserve of 10-20 % is recommended in order to comply with the accuracies given.

For the  $Q_{\min}$  small load, at an SZ of 2.5

$$Q_{\min} = 0,025 \cdot K_G \cdot p_{u \text{ max}}$$

Note:  $Q_{\min}$  small load - When starting the burner or at  $Q_{\min}$ , the value should be at least 1 % of the  $K_G$ -value.

## Checking the gas velocities

$$w = 380 \cdot Q_n / (\text{DN}^2 \cdot p_{\text{abs}})$$

Note: The factor 380 refers to an operating gas temperature from approx.  $15^\circ \text{C}$  to  $20^\circ \text{C}$ . For other temperatures, the velocity must be corrected as follows:  
 $w_{\text{corr}} = w \cdot (t_{\text{gas}} + 273.15) / 290$

Recommended max. gas velocity at the inlet flange:  
 50 - 70 m/s lower value for deflections upstream of the regulating valve, 20 m/s for filters connected upstream

Recommended max. gas velocity at the outlet flange:  
 100 - 200 m/s Lower value for reducing noise emission

Recommended max. gas velocity at the impulse tap:  
 15 - 25 m/s Lower value for outlet pressures below 100 mbar

## EXAMPLE

$$p_{u \text{ min}} 5,0 \text{ bar} / p_{u \text{ max}} 8,0 \text{ bar}$$

$$p_{d \text{ min}} 0,2 \text{ bar} / p_{d \text{ max}} 1/2 \text{ bar}$$

$$Q_{n \text{ min}} 800 \text{ m}^3/\text{h} / Q_{n \text{ max}} 1.500 \text{ m}^3/\text{h}$$

Values as absolute pressures

$$1 1/2 \text{ bar} / 6 \text{ bar} = 0,25 < 1/2$$

→ supercritical pressure ratio

$$K_G = 2 \cdot 1500 / 6 = 500 \text{ (m}^3/\text{h)/bar}$$

RS 250 DN 50 VS 32,5

$K_G$  - Value: 750 (m<sup>3</sup>/h)/bar (regarding page)

$$Q_{\min} = 0,025 \cdot 750 \cdot 9 = 169 \text{ m}^3/\text{h}$$

Inlet and outlet nominal size of the pipeline

according to the selected device: 50 mm

Selected widening of the outlet pipeline: 150 mm

$$w_u = 380 \cdot 1500 / (50^2 \cdot 6) = 38 \text{ m/s}$$

$$w_d = 380 \cdot 1500 / (50^2 \cdot 1,5) = 152 \text{ m/s}$$

$$w_{\text{inputs}} = 380 \cdot 1500 / (150^2 \cdot 1,5) = 17 \text{ m/s}$$

The device selected in the example of nominal size DN 50 can be operated under these conditions.



### Characteristics of Gases

Gas	f	H <sub>s,n</sub> [kWh/m <sup>3</sup> ]	Gas	f	H <sub>s,n</sub> [kWh/m <sup>3</sup> ]
Acetylene	0,84	16,25	Helium	2,15	-
Ammonia	1,04	4,83	Sewage gas	0,84	-
Butane	0,55	37,23	Carbon monoxide	0,81	3,51
Chlorine	0,51	-	Carbon dioxide	0,65	-
Landfill gas	ca. 0,80	-	Air	0,80	-
Natural gas L	1,00	9,77	Methane	1,08	11,06
Natural gas H	1,03	11,45	Propane	0,64	28,03
Ethane	0,78	19,55	Oxygen	0,76	-
Ethylene	0,97	16,516	Sulphur dioxide	0,53	-
Mine gas	(30 % CH <sub>4</sub> )	0,86	Nitrogen	0,81	-
			Hydrogen	3,04	13,43

### Pressure conversion factors

Unit	bar	mbar	Pa N/m <sup>2</sup>	at kp/cm <sup>2</sup>	atm	Torr mmHg mmQS	psi lbf/in <sup>2</sup>
1 bar	1	10 <sup>3</sup>	10 <sup>5</sup>	1,02	0,987	750	14,5
1 mbar	10 <sup>-3</sup>	1	100	1,02 · 10 <sup>-3</sup>	0,987 · 10 <sup>-3</sup>	0,750	0,0145
1 Pa 1 N/m <sup>2</sup>	10 <sup>-5</sup>	0,01	1	1,02 · 10 <sup>-5</sup>	0,987 · 10 <sup>-5</sup>	0,0075	1,45 · 10 <sup>-4</sup>
1 at 1 kp/cm <sup>2</sup>	0,981	981	0,981 · 10 <sup>5</sup>	1	0,968	736	14,22
1 atm	1,013	1013	1,013 · 10 <sup>5</sup>	1,033	1	760	14,696
1 Torr 1 mm Hg 1 mm QS	1,333 · 10 <sup>-3</sup>	1,333	133,322	1,36 · 10 <sup>-3</sup>	1,316 · 10 <sup>-3</sup>	1	1,934 · 10 <sup>-2</sup>
1 psi 1 lbf/in <sup>2</sup>	6,895 · 10 <sup>-2</sup>	68,95	6895	7,031 · 10 <sup>-2</sup>	0,06805	51,7	1

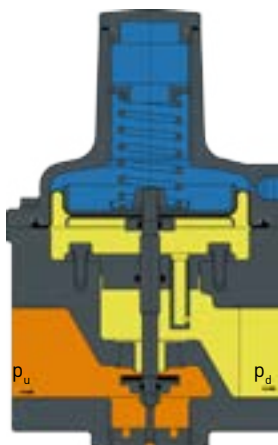
### Units conversion factors

	kWh	J = Ws = Nm
1 kWh	1	3,6 · 10 <sup>6</sup>
1 J = 1 Ws = 1 Nm	277,8 · 10 <sup>-9</sup>	1
1 PSh	0,7355	2,6476 · 10 <sup>6</sup>
1 kpm	2,724 · 10 <sup>-6</sup>	9,81
1 kcal	1,163 · 10 <sup>-3</sup>	4186,8
1 ft lbf	376,6 · 10 <sup>-9</sup>	1,3558
1 in ozf	1,96 · 10 <sup>-9</sup>	0,00706
1 ft pdl	1,17 · 10 <sup>-8</sup>	0,04214
1 SKE	8,141	31,83 · 10 <sup>6</sup>

### Notes

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# GAS PRESSURE REGULATOR | R 50



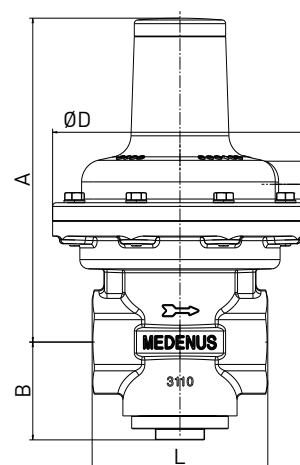
## Design und Function

The spring-loaded gas pressure regulator R 50 has the function of keeping the outlet pressure of a gaseous medium constant within allowable limits. The gas pressure regulator is composed of the actuator housing and the "diaphragm assembly plus actuator" functional unit. The gas flows through the actuator housing in the direction of the arrow. The internal measurement line port is used for passing the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve stem to the actuator, which is adjusted such that the actual value is adjusted to the setpoint. In case of zero flow, the actuator will close tight, causing the closing pressure to be established.

## Dimensions / Nominal size

	DN 25 Rp 1"	DN 40 Rp 1 1/2"	DN 50 Rp 2"
A* [mm]	173	173	173
B [mm]	53	61	61
L [mm]	100	140	160
D [mm]	145	145	145
Connection type	Rp1"	Rp1 1/2"	Rp2"

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.



## THIS IS HOW YOU SELECT YOUR GAS PRESSURE REGULATOR R 50

- Determine the required flow rate
- Select a size that can handle the required flowrate
- Select the version of the valve that can do the required outlet pressure
- Select any options you require
- When ordering please advise the direction of the gas flow (from right to left or left to right).

Got questions  
about the R 50?  
[info@medenus.de](mailto:info@medenus.de)



## Valve diameter

Nominal size	Valve diameter [mm]
DN 25 (Rp1")	11,0
	15,0
	20,0
DN 40 (Rp 1½")	15,0
	25,0
DN 50 (Rp2")	15,0
	25,0

## Options

- Vent valve (BV) for breather connection
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1

## Characteristics

Inlet pressure $p_u$	max. 3 bar
Outlet pressure $p_d$	0,2 - 1,2 bar
Rp1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp1 ½"; Rp2": $Q_{max}$	300 Nm <sup>3</sup> /h
PS	5 bar
Ambient temperature	-20 °C to +60 °C
Housing material	aluminium
Approval	according PED
Gas specification	gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

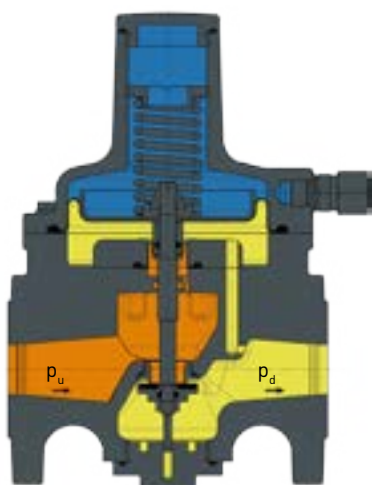
## Versions

Nominal Size	Description	Outlet pressure-ranges [mbar]
DN 25 Rp 1"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with high-pressure screw spindle	1.001 - 1.200
DN 40 Rp 1½"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with high-pressure screw spindle	1.001 - 1.200
DN 50 Rp 2"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with high-pressure screw spindle	1.001 - 1.200

\*) When using a high pressure screw spindle the height is different to that quoted. For further information visit our product page [products.medenus.de/R50](http://products.medenus.de/R50)



# GAS PRESSURE REGULATOR | R 51



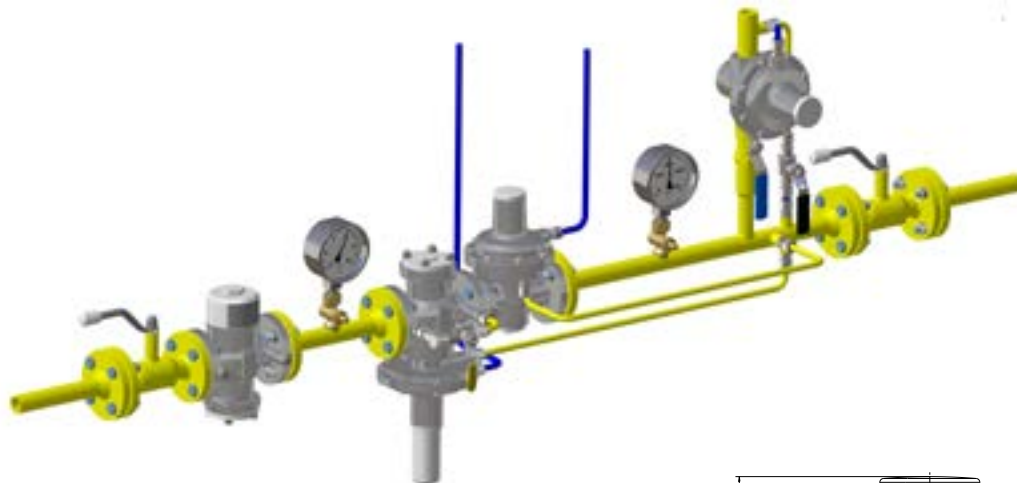
## Design and function

The spring-loaded gas pressure regulator R 51 has the function of keeping the outlet pressure of a gaseous medium constant within permissible limits, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas flow, in the connected regulating line on the outlet side. The regulator is composed of the actuator housing and "diaphragm assembly plus actuator" functional unit.

The valve seat model is pre-pressure-compensated.

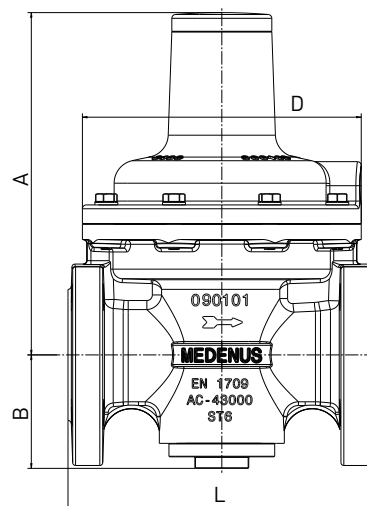
The gas flows through the actuator housing in the direction of the arrow. The internal or external measurement line port is used for passing the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve rod to the actuator, which is adjusted such that the actual value is adjusted to the setpoint.

In case of zero flow, the actuator will close tight, causing the closing pressure to be established.



## Dimensions / Nominal size

	DN 25
A* [mm]	180
B [mm]	60
L [mm]	160
D [mm]	145
Weight [kg]	3,6
Connection type	DIN 1092 - PN16



## Versions

Nominal size	Description	Outlet pressure ranges [mbar]
DN 25	Standard	20 - 575
	High-pressure version	420 - 1.000
	High-pressure version with high-pressure screw spindle	1.000 - 3.000

## Options

- External measuring connection
- Vent valve **(BV)** for breather connection
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate **(ATC)** to EN 10204/3.1

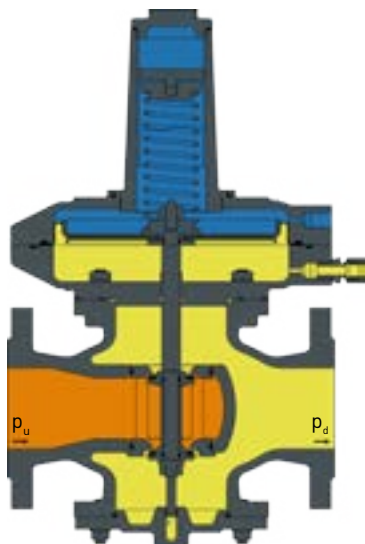
## Characteristics

Inlet pressure $p_u$	10 bar
Outlet pressure $p_d$	0,02 - 3 bar
$K_G$ -value **	175 (m <sup>3</sup> /h)/bar
Ambient temperature	-20 °C to +60 °C
PS	10 bar
Housing Material	aluminium
Approval	according to PED gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases.
Gas specification	Other gases on request.

\*) When using a high pressure screw spindle the height is different to that quoted. For further information visit our product page [products.medenus.de/R51](http://products.medenus.de/R51)

\*\*) With an internal impulse line, the maximum accuracy class (AC) can only be reached at  $Q_n < 100\text{m}^3/\text{h}$ .





## Design and function

The spring-loaded gas pressure regulator R 100 has the function of keeping the outlet pressure of a gaseous medium constant within allowable limits, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas flow, in the connected regulating line on the outlet side. The gas pressure regulator is composed of the actuator housing and the “diaphragm assembly plus actuator” functional unit. The double valve seat model is pre-pressure-compensated. The gas flows through the actuator housing in the direction of the arrow. The external measurement line port is used for passing the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve stem to the actuator, which is adjusted such that the actual value is adjusted to the setpoint. In case of zero flow, the actuator will close tight, causing the closing pressure to be established.

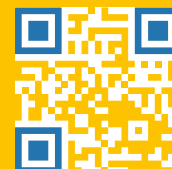
## Characteristics

Inlet pressure $p_u$	max. 8 bar
Outlet pressure $p_d$	8 - 1.200 mbar
PS	8 bar
Ambient temperature	-20 °C to +60 °C
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## THIS IS HOW YOU SELECT YOUR GAS PRESSURE REGULATOR R 100

- Determine the required KG value (see page 8).
- Using the KG value you have just calculated, select a suitably sized valve from the “KG - Value” table below. Allow at least an additional 10 % spare capacity in the valve you select.
- Select the diaphragm assembly that has the relevant outlet pressure from the “Version” table below.
- Select any options you require
- In addition, check the flow rates (see page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right). For safety reasons, please also provide us with your process details ( $P_u$ ,  $p_d$ ,  $Q_n$  and the type of gas) so we can check your selection.



Got questions about the R 100?  
[info@medenus.de](mailto:info@medenus.de)

## Dimensions / Nominal size

	DN 50	DN 80	DN 100	DN 150	DN 200
A* [mm]	372 - 398	394 - 421	407 - 433	647 - 694	677 - 724
B [mm]	115	138	150	195	245
L [mm]	250	280	300	380	420
D [mm]	160 - 385	162 - 385	162 - 385	275 - 385	275 - 385
Connection type	DIN 1092 - PN16			-PN 10	
	ASME B 16.5 - CLASS 150				

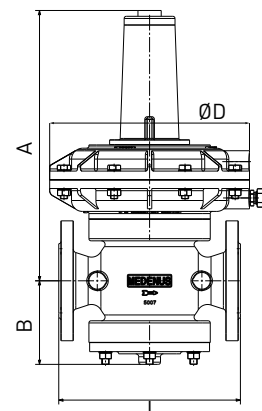
Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## K<sub>G</sub> - Value

Nominal Size	Valve diameter [mm]	K <sub>G</sub> -value [(Nm <sup>3</sup> /h)/bar]
DN 25	27,5 - 27,5	800
DN 80	32,5 - 32,5	1.500
	45,0 - 50,0	2.500
DN 100	42,5 - 42,5	2.400
	60,0 - 65,0	4.700
DN 150	65,0 - 65,0	5.200
	95,0 - 100	12.000
DN 200	90,0 - 90,0	10.000
	125 - 130	20.200

## Versions

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure range [mbar]
DN 50	with RE 390	130 - 450	8 - 450
	with RE 275	400 - 1.100	- 1.100
	with RE 160	-	- 1.200
DN 80	with RE 390	130 - 450	8 - 450
	with RE 275	400 - 1.100	- 1.100
	with RE 160	-	- 1.200
DN 100	with RE 390	130 - 450	8 - 450
	with RE 375	400 - 1.100	- 1.100
	with RE 160	-	- 1.200
DN 150	with RE 385	350 - 850	8 - 850
	with RE 275	850 - 1.200	- 1.200
DN 200	with RE 385	350 - 850	8 - 850
	with RE 275	850 - 1.200	- 1.200

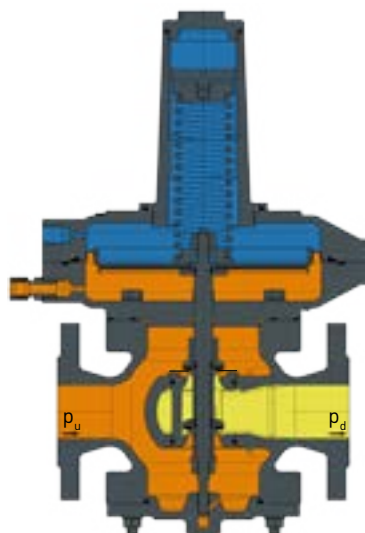


## Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces.\*
- Vent valve (**BV**) for breather connection
- Valve disc and valve pad made of stainless steel and FPR
- Throttle valve (**RSD**) for impulse line
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1

\*) When using a high pressure screw spindle the height is different to that quoted. For further information visit our product page [products.medenus.de/R100](https://products.medenus.de/R100)

# ROTARY REGULATOR | R 100 U



## Design and function

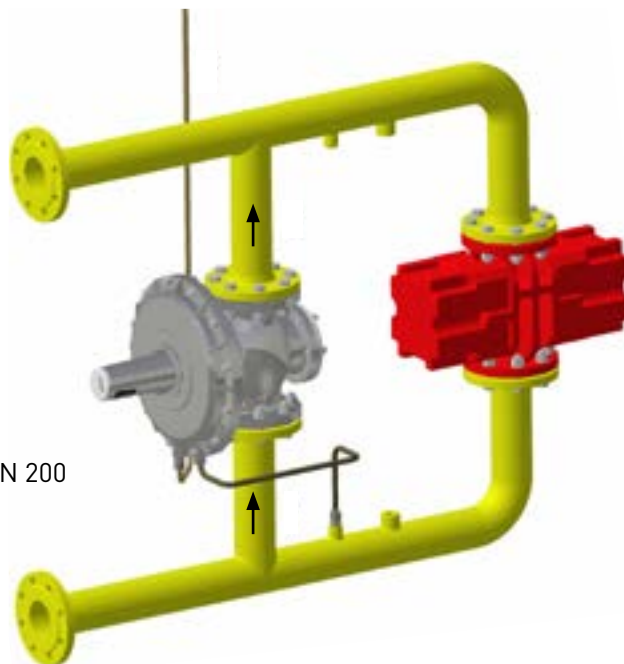
Circulation regulator for limiting the pressure in gas-pressure-increasing systems. Upon exceeding the opening pressure, the gas flows back to the suction side of the compressor.

## Information on device selection

Due to a very wide variation in applications and specific requirements of the gas pressure regulators, we would ask you to contact us for the detailed design of the devices.

## Characteristics

Inlet pressure $p_u$	8 - 1.200 mbar
Outlet pressure $p_d$	< $p_u$
PS	8 bar
Ambient temperature	-20 °C to +60 °C
Housing Material	aluminium
Nominal Size	DN 50 / DN 80 / DN 100 / DN 150 / DN 200
Connection type	DIN 1092 - PN16 (DN 200: PN10) ASME B 16.5 - Class 150
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

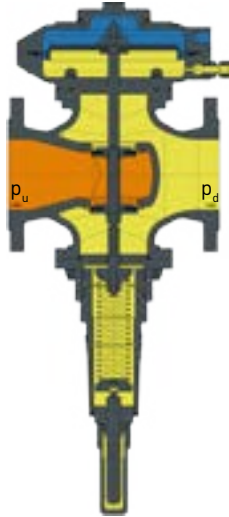


## Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces.\*
- Vent valve (**BV**) for breather connection
- Valve disc and valve pad made of stainless steel and FPR
- Throttle valve (**RSD**) for impulse line
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1



# VACUUM REGULATOR | R 100 UD

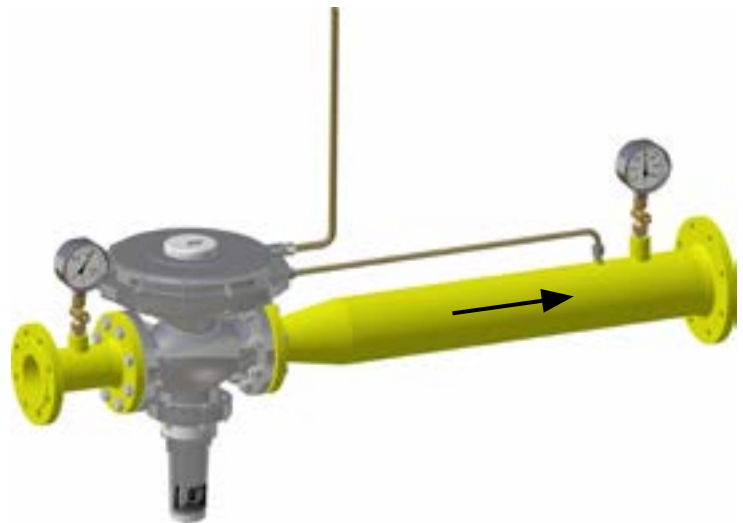


## Design and function

The vacuum regulator regulates the gas throughput proportionally to the underpressure, for example of a gas engine or a self-priming gas consumption device.

## Information on device selection

Due to a very wide variation in applications and specific requirements of the gas pressure regulators, we would ask you to contact us for the detailed design of the devices.



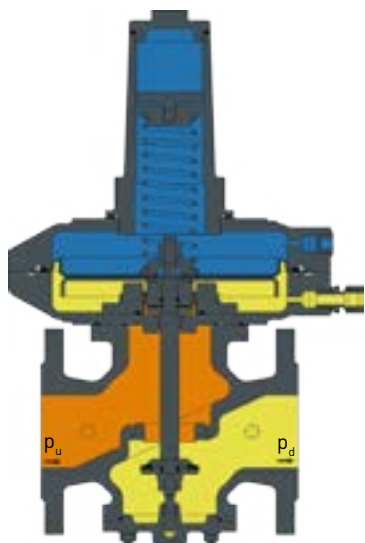
## Characteristics

Inlet pressure $p_u$	max. $\frac{1}{2}$ bar
PS	8 bar
Ambient temperature	-20 °C to +60 °C
Housing Material	Aluminium
Nominal Size	DN 50 / DN 80 / DN 100 / DN 150 / DN 200
Connection type	DIN 1092 - PN16 (DN 200: PN10) ASME B 16.5 - Class 150
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

## Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces.\*
- Vent valve (**BV**) for breather connection
- Valve disc and valve pad made of stainless steel and FPR
- Throttle valve (**RSD**) for impulse line
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1

# GAS PRESSURE REGULATOR | R 101



## Design and function

The spring-loaded gas pressure regulator R 101 has the function of keeping the outlet pressure of a gaseous medium constant within allowable values, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas flow, in the connected regulating line on the outlet side. The gas pressure regulator is composed of the actuator housing and the "diaphragm assembly plus actuator" functional unit. The diaphragm assembly is pre-pressure-compensated. The gas flows through the actuator housing in the direction of the arrow. The external measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve stem to the actuator, which is adjusted such that the actual value is adjusted to the setpoint. In case of zero flow, the actuator will close tight, causing the closing pressure to be established.

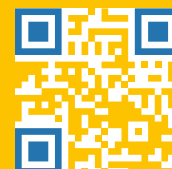
## Characteristics

Inlet pressure $p_u$	max. 8 bar
Outlet pressure $p_d$	8 - 1.200 mbar
PS	8 bar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## THIS IS HOW YOU SELECT YOUR GAS PRESSURE REGULATOR R 101

- Calculate the required KG value (see page 8)
- Using the KG value you have just calculated, select a suitably sized valve from the "KG - Value" table below. Allow at least an additional 10 % spare capacity in the valve you select.
- Select the diaphragm assembly that has the relevant outlet pressure from the "Version" table below.
- Select any options you require
- In addition, check the flow rates (see page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right). For safety reasons, please also provide us with your process details ( $P_u$ ,  $p_d$ ,  $Q_n$  and the type of gas) so we can check your selection.



Got questions about the R 101?  
[info@medenus.de](mailto:info@medenus.de)

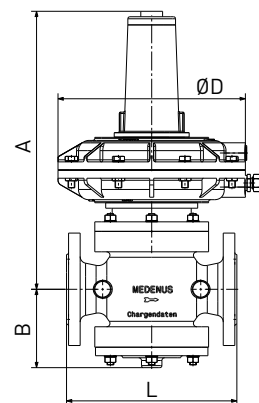
## Dimensions / Nominal size

	DN 25	DN 40	DN 50	DN 65	DN 100
A* [mm]	346 - 364	346 - 364	408	376	661
B [mm]	84	84	115	101	188
L [mm]	160	160	250	220	350
D [mm]	160 - 318	162 - 318	205 - 385	205 - 385	275 - 485
Connection type	DIN 1092 - PN16 / ASME B 16.5 - Class 150				

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## K<sub>G</sub> - Value

Nominal Size	Valve diameter [mm]	K <sub>G</sub> -Value [(Nm <sup>3</sup> /h)/bar]
DN 25	17,5	200
	27,5	460
DN 40	17,5	220
	27,5	600
	32,5	750
DN 50	32,5	1.000
	42,5	1.500
	52,5	1.800
DN 65	32,5	1.000
	42,5	1.500
	52,5	1.800
DN 100	65,0	3.500
	95,0	5.800



## Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces.\*
- Vent valve (**BV**) for breather connection
- Valve disc and valve pad made of stainless steel and FPR
- Throttle valve (**RSD**) for impulse line
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1

## Versions

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure ranges [mbar]
DN 25	with RE 320	200 - 800	8 - 800
	with RE 205	750 - 1.200	- 1.200
	with RE 160	-	- 1.200
DN 40	with RE 320	200 - 800	8 - 800
	with RE 205	750 - 1.200	- 1.200
	with RE 160	-	- 1.200
DN 50	with RE 385	130 - 450	8 - 450
	with RE 275	400 - 1.100	- 1.100
	with RE 205	750 - 1.200	- 1.200
DN 65	with RE 385	130 - 450	8 - 450
	with RE 275	400 - 1.100	- 1.100
	with RE 205	750 - 1.200	- 1.200
DN 100	with RE 485	150 - 450	8 - 450
	with RE 385	350 - 850	- 850
	with RE 275	850 - 1.200	- 1.200

\*) When using a high pressure screw spindle the height is different to that quoted.  
For further information visit our product page [products.medenus.de/R101](https://products.medenus.de/R101)



# OVERFLOW VALVE | R 101 U

## Design and function

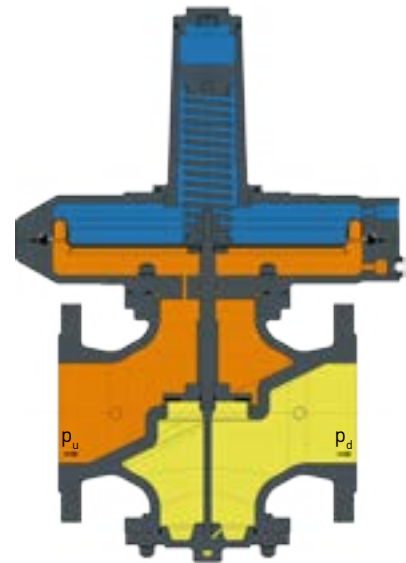
The R 101 U is a gas overpressure valve that opens from a set pressure. The diaphragm is charged from below through the impulse line (Ø8mm). When the pressure under the diaphragm becomes higher than the spring pressure, the valve will open, allowing the medium to escape. Since there is only spring load, the valve can be installed in any position.

## Information on device selection

Due to a very wide variation in applications and specific requirements of the gas pressure regulators, we would ask you to contact us for the detailed design of the devices.

## Options

- Vent valve (**BV**) for breather connection
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1



## Characteristics

Inlet pressure $p_u$	max. < 500 mbar
PS	max. < 500 mbar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
Housing Material	aluminium
Nominal Size	DN 50 / DN 65 / DN 80 / DN 100 / DN 125 / DN 150 / DN 200
Connection type	DIN 1092 - PN16 ASME B 16.5 - Class 150
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

# REGULATOR FOR GAS TORCHES | R 101 US

## Design and function

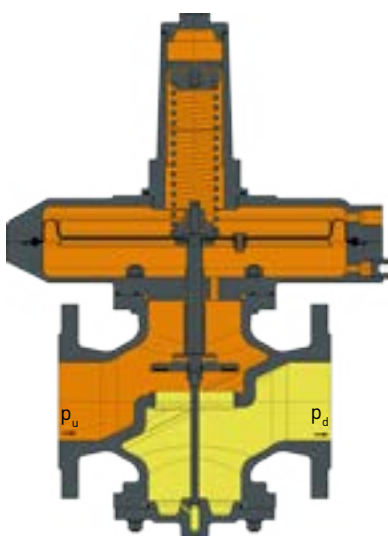
The R 101 US is a gas pressure control valve controlled via a solenoid valve. When the solenoid valve is closed, the open bore in the diaphragm ensures that the pressure on both sides of the diaphragm in the diaphragm gas will flow through the bore in the diaphragm as in the closed solenoid valve. However, the gas can escape more quickly through the now open solenoid valve through a larger bore than the gas that enters through the bore in the membrane. As a result, higher pressure builds up under the diaphragm, resulting in the valve being opened.

## Options

- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1

## Information on device selection

Due to a very wide variation in applications and specific requirements of the gas pressure regulators, we would ask you to contact us for the detailed design of the devices.



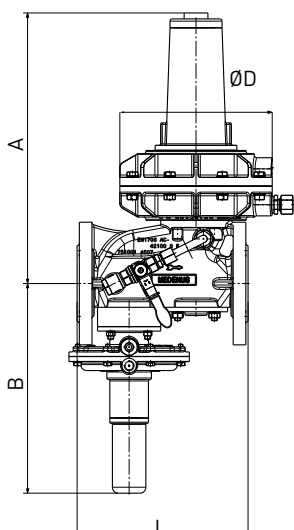
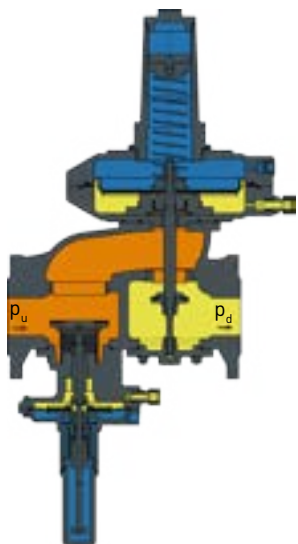
## Characteristics

Inlet pressure $p_u$	max. 10 - 50 mbar
Outlet pressure $p_d$	$< p_u$
PS	max. 10 - 50 mbar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
Housing Material	Aluminium
Nominal Size	DN 50 / DN 65 / DN 80 / DN 100 / DN 125 / DN 150 / DN 200
Connection type	DIN 1092 - PN16 ASME B 16.5 - Class 150
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.



# GAS PRESSURE REGULATOR | RS 250 / RS 251

with integrated safety shut-off valve with a maximum inlet pressure up to 8 bar



## Design and function

The spring-loaded gas pressure regulators RS 250 / RS 251 have the function of keeping the outlet pressure of a gaseous medium constant within allowable limit values, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas flow, in the connected regulating line on the outlet side. The gas pressure regulator is composed of the actuator housing and the “diaphragm assembly plus actuator” and “SRV controller/switching device plus actuator” functional units.

For each nominal size, the actuator of the diaphragm assembly can be designed in different valve seat diameters. The diaphragm assembly is pre-pressure-compensated and can be equipped with noise reduction on request.

The gas flows through the actuator housing in the direction of the arrow. The measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve stem to the actuator, which is adjusted such that the actual value is adjusted to the setpoint. In case of zero flow, the actuator will close tight, causing the closing pressure to be established. In case of inadmissible overpressure or lack of gas in the regulating section, the actuator of the safety shut-off valve arranged in the same housing on the inlet side will shut off the gas flow. To this end, the outlet pressure to be monitored is passed to the SSV control device via a separate measurement line. As a function of the change in pressure, the diaphragm comparator in the controller is raised or lowered. When the outlet pressure in the regulating section exceeds or falls below a certain response pressure, the switch socket connected to the SSV diaphragm will move to the corresponding disengaging position, the balls of the engaging mechanism will release the SSV valve stem, and the closing spring will press the SSV valve disc against the valve seat. The SSV actuator shuts off the gas flow gas-tight. The SSV can only be opened by hand and engaged in the open position. To do so, the outlet pressure at the measuring point must be lowered below the upper response pressure or raised above the lower response pressure by at least the re-engaging differential amount ( $\Delta p$ ).

## Dimensions / Nominal size

	RS 250						RS 251		
	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
A** [mm]	328 -338	348 -364	406	421	716 -730	784,5 -798,5	406	664 -658	716 -730
B [mm]	269	282	305	315	386	400	305	311	386
L [mm]	230	230	310	350	480	600	310	410	480
D** [mm]	160 -318	160 -318	205 -385	205 -385	275 -485	275 -485	205 -385	275 -385	275 -485
Connection type	DIN 1092 - PN16 ASME B 16.5 - Class 150								

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## K<sub>G</sub>-Value [(Nm<sup>3</sup>/h)/bar]

	RS 250						RS 251		
	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
17,5	200	220							
27,5	420	500	550	600			550		
32,5		750	850	900			750		
42,5			1.450	1.500	1.600		1.250	1.500	1.500
52,5				1.800	2.000		1.700	1.800	1.850
65,0					3.500			2.600	3.200
85,0					4.600			3.500	4.300
95,0					5.800	6.100			4.800
115,0						8.950			

## Characteristics

Inlet pressure p <sub>u</sub>	max. 8 bar
Outlet pressure p <sub>d</sub>	18 - 3.000 mbar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
SAV p <sub>ds o</sub>	30 - 4.000 mbar
SAV p <sub>ds u</sub>	5 - 300 mbar
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.



\*\*) Dimensions depend on the diaphragm assembly used.

## Versions RS 250

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure range [mbar]
RS 250 DN 25	with RE 320 with RE 205	200 - 800 750 - 3.000	18 - 200 200 - 3.000
RS 250 DN 50	with RE 320 with RE 205	200 - 800 750 - 3.000	18 - 200 200 - 3.000
RS 250 DN 80	with RE 390 with RE 275 with RE 205	130 - 450 400 - 1.100 750 - 3.000	18 - 100 100 - 400 400 - 3.000
RS 250 DN 100	with RE 390 with RE 275 with RE 205	130 - 450 400 - 1.100 750 - 3.000	18 - 100 100 - 400 400 - 3.000
RS 250 DN 150	with RE 485 with RE 385 with RE 275	150 - 450 350 - 850 850 - 3.000	18 - 150 150 - 350 350 - 3.000
RS 250 DN 200	with RE 485 with RE 385 with RE 275	150 - 450 350 - 850 850 - 3.000	18 - 150 150 - 350 350 - 3.000



### Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces. \*
- Noise reduction \*\*
- Safety diaphragm for the diaphragm assembly \*\*
- Safety relief valve (**SRV**) for the diaphragm assembly \*\*
- Vent valve (**BV**) for breather connection \*\*
- Valve disc and valve pad made of stainless steel and FPR
- Throttle valve (**RSD**) for impulse line
- SSV position indicator
  - Inductive
  - Reed contact
- SSV release \*\*
  - Manual release
  - Remote release (upon current supply or in case of power failure)
  - Manual and remote release (upon current supply or in case of power failure)
- Suitable for oxygen ( $p_u \leq 10$  bar)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1



## Versions RS 251

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure range [mbar]
RS 251 DN 50	with RE 390	130 - 450	22 - 100
	with RE 275	400 - 1.100	100 - 400
	with RE 205	750 - 1.200	400 - 1.200
RS 251 DN 80	with RE 385	350 - 850	22 - 350
	with RE 275	850 - 1.200	350 - 1.200
RS 251 DN 100	with RE 485	150 - 450	22 - 150
	with RE 385-2	350 - 850	150 - 350
	with RE 275-2	850 - 1.200	350 - 1.200

\*) When using a high pressure screw spindle the height is different to that quoted. For further information visit our product page [products.medenus.de/RS250](http://products.medenus.de/RS250) and [products.medenus.de/RS251](http://products.medenus.de/RS251)

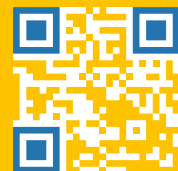
\*\*) Dimensions depend on the diaphragm assembly used.

## THIS IS HOW YOU SELECT YOUR GAS PRESSURE REGULATOR RS 250 / RS 251

- Calculate the required KG value (see page 8)
- Using the KG value you have just calculated, select a suitably sized valve from the "KG - Value" table below. Allow at least an additional 10 % spare capacity in the valve you select.
- Select the diaphragm assembly that has the relevant outlet pressure from the "Version" table below.
- For the selection of the relevant safety shut-off valve, please refer to our Product information leaflet RS 250 / RS 251, which can be found on our website in the Service / Downloads area
- Select any options you require
- In addition, check the flow rates (see page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right). For safety reasons, please also provide us with your process details ( $P_u$ ,  $p_d$ ,  $Q_n$  and the type of gas) so we can check your selection.



Got questions about the RS 250?  
[info@medenus.de](mailto:info@medenus.de)

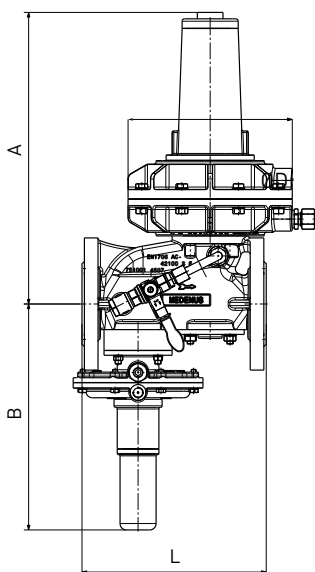
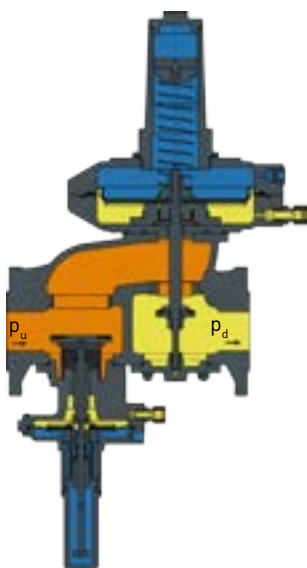


Got questions about the RS 251?  
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# GAS PRESSURE REGULATOR | RS 254 / RS 255 CE EAC

with integrated safety shut-off valve with a maximum inlet pressure up to 16 bar



## Design and function

The spring-loaded gas pressure regulators RS 254 / RS 255 have the function of keeping the outlet pressure of a gaseous medium constant within allowable limit values, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas flow, in the connected regulating line on the outlet side. The gas pressure regulator is composed of the actuator housing and the “diaphragm assembly plus actuator” and “SRV controller/switching device plus actuator” functional units.

For each nominal size, the actuator of the diaphragm assembly can be designed in different valve seat diameters. The diaphragm assembly is pre-pressure-compensated and can be equipped with noise reduction on request.

The gas flows through the actuator housing in the direction of the arrow. The measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve stem to the actuator, which is adjusted such that the actual value is adjusted to the setpoint. In case of zero flow, the actuator will close tight, causing the closing pressure to be established. In case of inadmissible overpressure or lack of gas in the regulating section, the actuator of the safety shut-off valve arranged in the same housing on the inlet side will shut off the gas flow. To this end, the outlet pressure to be monitored is passed to the SSV control device via a separate measurement line. As a function of the change in pressure, the diaphragm comparator in the controller is raised or lowered. When the outlet pressure in the regulating section exceeds or falls below a certain response pressure, the switch socket connected to the SSV diaphragm will move to the corresponding disengaging position, the balls of the engaging mechanism will release the SSV valve stem, and the closing spring will press the SSV valve disc against the valve seat. The SSV actuator shuts off the gas flow gas-tight. The SSV can only be opened by hand and engaged in the open position. To do so, the outlet pressure at the measuring point must be lowered below the upper response pressure or raised above the lower response pressure by at least the re-engaging differential amount ( $\Delta p$ ).

## Dimensions / Nominal size

	RS 254						RS 255		
	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
A** [mm]	328 -338	348 -364	406	421	716 -730	784,5 -798,5	406	664 -658	716 -730
B [mm]	269	282	305	315	386	400	305	311	386
L [mm]	230	230	310	350	480	600	310	410	480
D** [mm]	160 -318	160 -318	205 -385	205 -385	275 -485	275 -485	205 -385	275 -385	275 -485
Connection type	DIN 1092 - PN16 ASME B 16.5 - Class 150								

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## K<sub>G</sub>-Value [(Nm<sup>3</sup>/h)/bar]

	RS 254						RS 255		
	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
17,5	200	220							
27,5	420	500	550	600			550		
32,5		750	850	900			750		
42,5			1.450	1.500	1.600		1.250	1.500	1.500
52,5				1.800	2.000		1.700	1.800	1.850
65,0					3.500			2.600	3.200
85,0					4.600			3.500	4.300
95,0					5.800	6.100			4.800
115,0						8.950			

## Characteristics

Inlet pressure p <sub>u</sub>	max. 16 bar
Outlet pressure p <sub>d</sub>	18 - 3.000 mbar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
SAV p <sub>ds o</sub>	50 - 4.000 mbar
SAV p <sub>ds u</sub>	10 - 1.000 mbar
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

\*\*) Dimensions depend on the diaphragm assembly used.



## Versions RS 254

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure range [mbar]
DN 25	with RE 320	200 - 800	18 - 200
	with RE 205	750 - 1.200	200 - 750
DN 50	with RE 320	200 - 800	18 - 200
	with RE 205	750 - 1.200	200 - 750
DN 80	with RE 390	130 - 450	18 - 100
	with RE 275	400 - 1.100	100 - 400
	with RE 205	750 - 3.000	400 - 3.000
DN 100	with RE 390	130 - 450	18 - 100
	with RE 275	400 - 1.100	100 - 400
	with RE 205	750 - 3.000	400 - 750
DN 150	with RE 485	150 - 450	18 - 150
	with RE 385	350 - 850	150 - 350
	with RE 275	850 - 3.000	350 - 850
DN 200	with RE 485	150 - 450	18 - 150
	with RE 385	350 - 850	150 - 350
	with RE 275	850 - 3.000	350 - 850



### Options

- High-pressure screw spindle (**HDS**) for convenient and accurate setting of the regulator despite high spring forces\*
- Noise reduction by metal foam ring
- Safety diaphragm for the control device
- Safety relief valve (SRV) for the diaphragm assembly
- Vent valve (**BV**) for breather connection
- Throttle valve (**RSD**) for breather connection
- Shift valve (**RSS**) for the breathing port on SAV as diaphragm rupture
- SSV position indicator "close"
  - Inductive
  - Reed kontakt
- SSV release
  - Manual release
  - Remote release (upon current supply or in case of power failure)
  - Manual and remote release (upon current supply or in case of power failure)
- Suitable for oxygen ( $p_{O_2} \leq 10$  bar)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1

## Versions RS 255

Nominal Size	Description	Recommended use of the high-pressure screw spindle in the pressure range [mbar]	Outlet pressure range [mbar]
DN 50	with RE 390	130 - 450	18 - 100
	with RE 275	400 - 1.100	100 - 400
	with RE 205	750 - 3.000	400 - 750
DN 80	with RE 385	350 - 850	18 - 350
	with RE 275-2	850 - 3.000	350 - 850
DN 100	with RE 485	150 - 450	18 - 150
	with RE 385	350 - 850	150 - 350
	with RE 275-2	850 - 3.000	350 - 850

\*) When using a high pressure screw spindle the height is different to that quoted. For further information visit our product page [products.medenus.de/RS254](http://products.medenus.de/RS254) and [products.medenus.de/RS255](http://products.medenus.de/RS255)

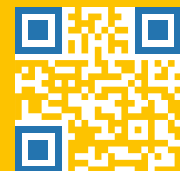
\*\*) Dimensions depend on the diaphragm assembly used.

## THIS IS HOW YOU SELECT YOUR GAS PRESSURE REGULATOR RS 254 / RS 255

- Calculate the required KG value (see MEDENUS Price List page 8)
- Using the KG value you have just calculated, select a suitably sized valve from the "KG - Value" table below. Allow at least an additional 10 % spare capacity in the valve you select.
- Select the diaphragm assembly that has the relevant outlet pressure from the "Version" table below.
- For the selection of the relevant safety shut-off valve, please refer to our Product information leaflet RS 254 / RS 255, which can be found on our website in the Service / Downloads area
- Select any options you require
- In addition, check the flow rates (see MEDENUS Price page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right). For safety reasons, please also provide us with your process details ( $p_u$ ,  $p_d$ ,  $Q_n$  and the type of gas) so we can check your selection.



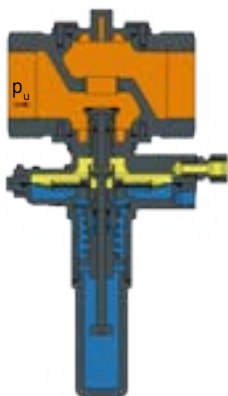
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Sie haben Fragen zum RS 255?  
[info@medenus.de](mailto:info@medenus.de)

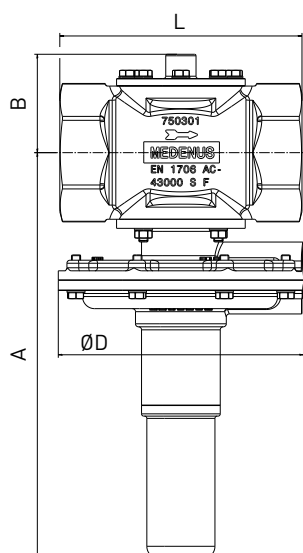


# SAFETY SHUT-OFF VALVE | S 50



## Design and function

The safety shut-off valve S 50 shuts off the gas flow when the outlet pressure in the regulating sections exceeds or falls below a certain response pressure. To this end, the outlet pressure to be monitored is passed to the SSV controller via a separate measurement line. As a function of the change in pressure, the diaphragm comparator in the controller is raised or lowered. When the outlet pressure in the regulating section falls below the lower switch-off point or exceeds the upper switch-off point, the switch socket connected to the SSV diaphragm will move to the corresponding disengaging position, the balls of the engaging mechanism will release the SSV valve stem, and the closing spring will press the SSV valve disc against the valve seat. The SSV actuator shuts off the gas flow gas-tight. The SSV can only be opened by hand and engaged in the open position. To do so, outlet pressure at the measuring point must be lowered below the upper response pressure or raised above the lower response pressure by at least the re-engaging differential amount ( $\Delta p$ ).



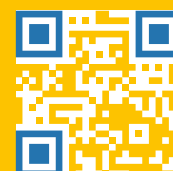
## Dimensions / Nominal size

	DN 25 RP 1"	DN 40 RP 1½"	DN 50 RP 2"
A* [mm]	261	268	268
B [mm]	59	65	65
L [mm]	100	140	160
D [mm]	162	162	162
Connection type	RP 1"	RP 1½"	RP 2"

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## THIS IS HOW YOU SELECT YOUR SAFETY SHUT-OFF VALVE S 50

- Determine the required flow rate
- Select a size that can handle the required flowrate
- Select the version of the valve that can do the required outlet pressure
- Select any options you require
- In addition, check the flow rates (see page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right).



Got questions about the S 50?  
[info@medenus.de](mailto:info@medenus.de)



### Characteristics

Inlet pressure $p_u$	max. 3 bar
$p_{ds\ o}$	50 - 1.500 mbar
$p_{ds\ u}$	10 - 300 mbar
Ambient temperature	-20 °C to +60 °C
Rp1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp1 1/2"; Rp2": $Q_{max}$	300 Nm <sup>3</sup> /h
Mounting position	any
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

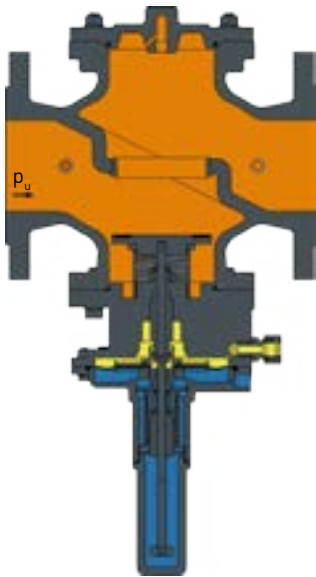
### Options

- Vent valve (**BV**) for breather connection
- SSV position indicator
  - Inductive
  - Reed contact
- SSV release
  - Manual release
  - Remote release (upon current supply or in case of power failure)
  - Manual and remote release (upon current supply or in case of power failure)
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (**ATC**) to EN 10204/3.1

### Versions

Nominal Size	Description
DN 25	S 50 connection Rp 1" on both sides
DN 40	S 50 connection Rp 1 1/2" on both sides
DN 50	S 50 connection Rp 2" on both sides

# SAFETY SHUT-OFF VALVE | S 100



## Design and function

The safety shut-off valve S 100 shuts off the gas flow when the outlet pressure in the regulating sections exceeds or falls below a certain response pressure. To this end, the outlet pressure to be monitored is passed on to the SSV controller via a separate measurement line. As a function of the change in pressure, the diaphragm comparator in the controller is raised or lowered. When the outlet pressure in the regulating section falls below the lower switch-off point or exceeds the upper switch-off point, the switch socket connected to the SSV diaphragm will move to the corresponding disengaging position, the balls of the engaging mechanism will release the SSV valve stem, and the closing spring will press the SSV valve disc against the valve seat. The SSV actuator shuts off the gas flow gas-tight. The SSV can only be opened by hand and engaged in the open position. To do so, the outlet pressure at the measuring point must be lowered below the upper response pressure or raised above the lower response pressure by at least the re-engaging differential amount ( $\Delta p$ ).

## Characteristics

Inlet pressure $p_u$	max. 8 bar
$P_{ds\ o}$	50 - 1.500 mbar
$P_{ds\ u}$	10 - 300 mbar
Ambient temperature	-20 °C to +60 °C
Mounting position	any
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## Options

- Vent valve **(BV)** for breather connection
- SSV position indicator
  - Inductive
  - Reed- contact
- SSV release
  - Manual release
  - Remote release (upon current supply or in case of power failure)
  - Manual and Remote release (upon current supply or in case of power failure)
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate **(ATC)** to EN 10204/3.1

## $K_G$ - Value

Nominal Size	Valve diameter [mm]	$K_G$ -Value [(Nm <sup>3</sup> /h)/bar]
DN 25	32,5	450
DN 40	32,5	550
DN 50	52,5	1.350
DN 65	52,5	1.650
DN 80	80,0	3.300
DN 100	80,0	3.900
DN 125	80,0	4.500
DN 150	125,0	8.000
DN 200	160,0	14.000



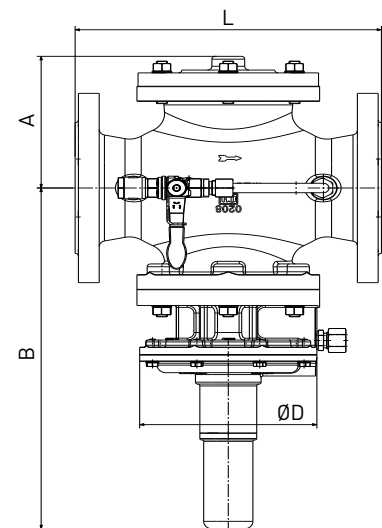
## Dimensions / Nominal size

	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
A* [mm]	286	314	336	342	360	360	371	371	475
B [mm]	105	98	115	116	139	150	150	195	225
L [mm]	160	160	250	220	280	280	260	300	420
D [mm]	162	162	162	162	162	162	162	162	162
Connection type	DIN 1092 - PN16								-PN10
	ASME B 16.5 - Class 150								

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.

## Versions

Nominal Size	Description
DN 25	Safety shut-off valve S 100
DN 40	Safety shut-off valve S 100
DN 50	Safety shut-off valve S 100
DN 65	Safety shut-off valve S 100
DN 80	Safety shut-off valve S 100
DN 100	Safety shut-off valve S 100
DN 125	Safety shut-off valve S 100
DN 150	Safety shut-off valve S 100
DN 200	Safety shut-off valve S 100



\*) DIN 1092 - PN10

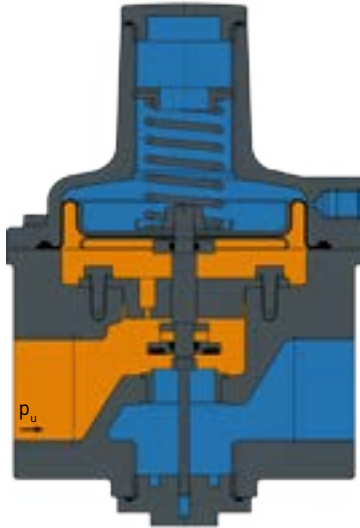
## THIS IS HOW YOU SELECT YOUR SAFETY SHUT-OFF VALVE S 100

- Calculate the required KG value at the supercritical pressure ratio (see page 8)
- This is followed by selecting the suitable nominal size for the required KG value from the table listed below
- Select any options you require..
- In addition, check the flow rates (see page 8)
- When ordering please advise the direction of the gas flow (from right to left or left to right).

Got questions about the S 100?  
[info@medenus.de](mailto:info@medenus.de)



# SAFETY RELIEF VALVE | SL 10



## Design and function

The spring-loaded safety relief valve SL 10 is used for reducing short-term pressure surges upstream of gas consumption systems or preventing an inadmissibly high pressure increase due to escaping gas.

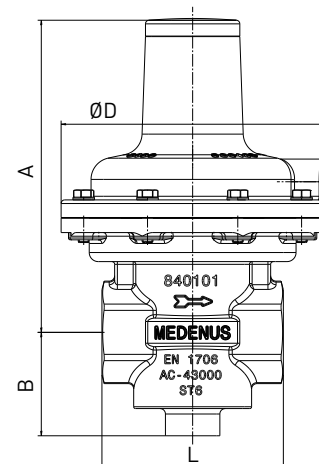
The safety relief valve is composed of the actuator housing and the "control device" functional unit.

In the open position, the gas flows through the actuator housing in the direction of the arrow. The internal measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the safety relief valve. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. When the setpoint is exceeded, the measuring movement will lift the actuator, allowing the gas to escape via the blow-off line.

## Dimensions / Nominal size

	DN 25 Rp 1"	DN 40 Rp 1 1/2"	DN 50 Rp 2"
A* [mm]	173	173	173
B [mm]	53	61	61
L [mm]	100	140	160
D [mm]	145	145	145
Connection type	Rp1"	Rp1 1/2"	Rp2"

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.



## THIS IS HOW YOU SELECT YOUR SAFETY RELIEF VALVE SL 10

- Determine the required blow-off quantity
- Select a size that can handle the required flowrate
- Then you select the desired blow-off pressure
- Select any options you require

Got questions about the SL 10?  
[info@medenus.de](mailto:info@medenus.de)



## Options

- Vent valve **(BV)** for breather connection
- Suitable for oxygen
- Coating with epoxy resin in RAL colours
- Acceptance test certificate **(ATC)** to EN 10204/3.1

## Characteristics

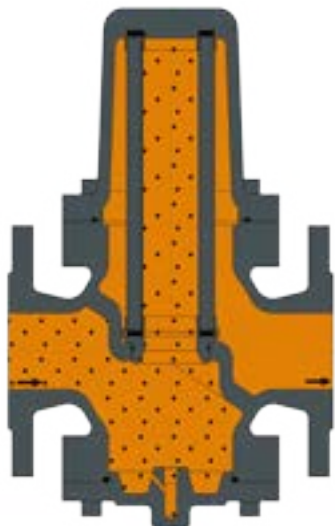
$p_{uo}$	0,025 - 3,5 bar
PS	8 bar
Rp1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp1 1/2"; Rp2": $Q_{max}$	300 Nm <sup>3</sup> /h
Ambient temperature	-20 °C to +60 °C
Mounting position	any
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

## Versions

Nominal Size	Description	Outlet pressure range [mbar]
DN 25 Rp 1"	Standard	25 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 3.500
DN 40 Rp 1 1/2"	Standard	25 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 3.500
DN 50 Rp 2"	Standard	25 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 3.500



# CELLULAR GAS FILTER | DF 100



## Design and function

The gas flows through the inlet flange into the filter housing. The more than 100-fold increased filter area compared with the cross-section of the inlet flange reduces the flow rate accordingly. The dust particles entrained in the gas are retained by the filter element. The cleaned gas flows off through the outlet flange.

The filters mainly consist of the housing, the cover and the filter cartridge. Taking off the cover for maintenance and replacement of the filter cartridge guarantees easy access. The filter cartridge consists of the filter basket and the filter element. Depending on the application and the particle size to be separated, the filter cartridge to be used must have a suitable pore size.

The lid at the bottom of the filter allows convenient removal of any residues formed.

## Characteristics

Inlet pressure $P_u$	max.16 bar
PS	16 bar
Ambient temperature	-20 °C to +60 °C optional -40 °C to +70 °C
Housing Material	aluminium
Approval	according to PED
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request..



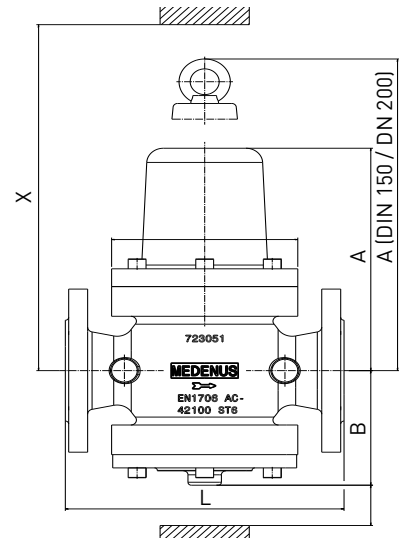
## Options

- Differential pressure gauge equipped with 2 shut-off ball valves (included loose in delivery)
- Differential pressure gauge equipped with Reed contact and 2 shut-off ball valves (included loose in delivery)
- Complete assembly of the differential pressure gauge and 2 ball valves
- Temperature range -40°C to +70°C
- Suitable for oxygen ( $p_u \leq 10$  bar)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate **(ATC)** to EN 10204/3.1

## Dimensions / Nominal size

	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200
L [mm]	160	250	280	350	380	420
A [mm]	117	225	317	404	817	954
B [mm]	101	116	138	188	195	225
D [mm]	85	167	167	200	230	280
X [mm]	192	350	512	546	1390	1600
Connection type	DN 1092 - PN16 / ASME B 16.5 - Class 150					
Weight [kg]	3,0	9,0	12,00	23,0	41,0	62,0

Please refer to the product information leaflet to get to know the clearance required above the valve for maintenance works or changes of the spring.



## Versions

Nominal Size	Description
DN 25	Cellular gas filter DF 100
DN 50	Cellular gas filter DF 100
DN 80	Cellular gas filter DF 100
DN 100	Cellular gas filter DF 100
DN 150	Cellular gas filter DF 100
DN 200	Cellular gas filter DF 100

## Recommended maximum operating volumetric flow

Nominal Size	Q <sub>B</sub> [m³/h]
DN 25	100
DN 50	400
DN 80	1.000v
DN 100	1.700
DN 150	3.800
DN 200	6.800

# THIS IS HOW YOU SELECT YOUR CELLULAR GAS FILTER DF 100

- Determine the required flow rate
- Select a size that can handle the required flowrate from the table listed above
- Select any options you require
- When ordering please advise the direction of the gas flow (from right to left or left to right)

Got questions about the DF 100?  
[info@medenus.de](mailto:info@medenus.de)



# ACCESSORIES



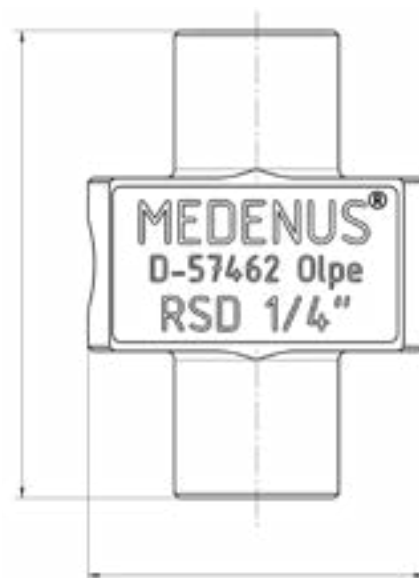
shown: SSV with inductive sensor



shown: brace and bit to adjust the setpoints easily

- Reed contact for the safety shut-off valve with cap
- For noise reduction, please refer to devices
- "Düse" valve selection software
- Helium leak test (e.g. for hydrogen applications)  
R 50 / S 50 / SL 10  
DN 25 - DN 100  
DN 125 - DN 200
- Additional or subsequent type plate
- Acceptance test certificate 3.1
- Acceptance test certificate 3.2
- Further accessories such as flange seals, spare parts

- Brace and bit with 4-jaw chuck 3.5 - 16 mm
- Extension for the brace and bit 1/2" - 76 mm
- Socket IS19 18 x 2.5 for the brace and bit
- Vente valve (BV) for connecting the breather to the diaphragm assembly, safety shut-off valve or the safety relief valve. When diaphragm breaks, the breather port ist automatically sealed
- Throttle valve (RSD) for the im pulse line on the diaphragm assembly. The throttle valve can be used to optimize the control behaviour of the controller if necessary
- Inductive sensor for safety shut-off valve with cap



nozzle valve rSD



## THE MEDENUS ADD ONS

### 10 reasons in favour of good business relationships

1. High levels of expertise and high quality standards developed over decade
2. Wide range of reliable, well proven regulators
3. Customised designs as well as special constructions can be supplied if you cannot find what you need from our standard range
4. Modern, fast and efficient production systems
5. Guaranteed delivery dates
6. Quick response times
7. We hold a large quantity of valve parts meaning new valves and spares can be supplied quickly
8. kundenspezifische Theorie- und Praxisschulungen
9. Optimised spare parts inventories due to the modular design of our whole product range
10. Made in Germany

# TRADE GOODS

To offer even better service and to save you time and money in your ordering processes, we also offer some other products German manufacturers as trading products.

## FLANGED BALL VALVES

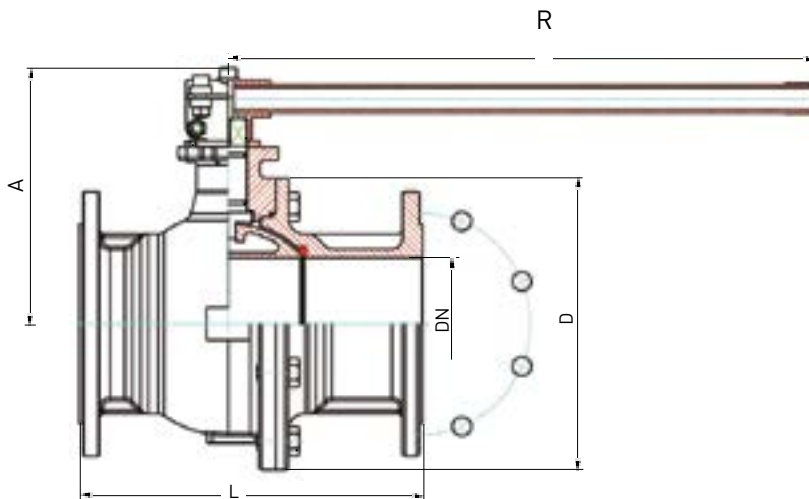
### Characteristics

PS	16 bar
Ambient temperature	-20 to +60 °C
Housing Material	Sphäroguß
<b>Corrosion protection</b>	Grundierung
Gas specification	gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. (other gases on request)

### Design and function

Our flanged ball valves consist of a two-piece spheroidal graphite cast iron housing and are fire-safe designed.

The sliding ball on the inside, sealed on three sides, is adjusted via the handle. Optionally, the handle can be replaced with an electric or pneumatic rotary drive.



### Options

- Special paint finishes

### Dimensions / Nominal size

	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
L [mm]	125	140	150	165	185	200	220	250	285	400
A [mm]	114	125	135,5	142,5	158	185,5	202,5	223	235	316
R [mm]	165	165	185	185	230	360	360	360	555	715
D [mm]	115	140	150	165	185	200	220	250	285	415
Connection type	DIN 1092 - PN16									
Weight [kg]	3,2	4,7	5,7	7,6	12	15,5	22,6	30,4	42	119,4



# TURBINE METER- QUANTOMETER



## Design and function

The turbine meter / quantometer is a flow meter. The flow of the gas to be measured rotates the impeller wheel. The gas flow is concentrated to an annular cross-section and directed onto the smooth-running aluminium impeller wheel. The number of turbine wheel revolutions is proportional to the flow volume, while the frequency of rotation is proportional to the flow rate. The rotation of the impeller wheel is reduced by means of a reduction gear and transmitted from the gas-filled room to the adjustable roller counter in the ambient atmosphere by means of a magnetic coupling. The quantometers are delivered without flanges als intermediate flange version together with the relevant thread bolts, nuts and flat seals.

## Characteristics

PS	16 bar
Ambient temperature	-20 to +55 °C
Housing Material	aluminium
PED- Approval	Hpi / 222-103-Q-01
Reproduzierbarkeit	< 0,2 %
Druckänderungsrate	< 0,35 bar/s
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

## Versions

Nominal Size	G- size	Q <sub>min</sub> [m <sup>3</sup> /h]	Q <sub>max</sub> [m <sup>3</sup> /h]
25/1"	G 10	2,0	16
25/1"	G 16	2,5	25
25/1"	G 25	4,0	40
50/2"	G 40	6,5	65
50/2"	G 65	10,0	100
80/3"	G 100	8,0	160
80/3"	G 160	12,5	250
80/3"	G 250	20,0	400
100/4"	G 160	12,5	250
100/4"	G 250	20,0	400
100/4"	G 400	32,0	650
150/6"	G 400	32,0	650
150/6"	G 650	50,0	1000
150/6"	G1000	80,0	1600

## Options

- Factory calibration measuring range 1:20
- aluminium counter head
- NF Reed contact for aluminium counter head
- 1 x MF for aluminium counter head
- 1 x HF sensor / 2 x HF sensor
- Oil pump
- 1 x thermowell / 2 x thermowell
- Additional copy of the manual
- Test certificate 3.1 without detailed materials list
- Test certificate 3.1 with detailed materials list

## Following characteristics are included as standard:

- 1 x NF Reed contact
- 1 x anti-manipulation contact
- Intermediate flange design with mounting aid
- Counter head made of plastic
- 1 x standard documentation
- Test certificate 2.2

# ELECTRONIC TURBINE METER MQME - QUANTOMETER



## Design and function

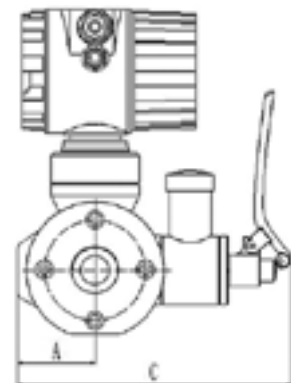
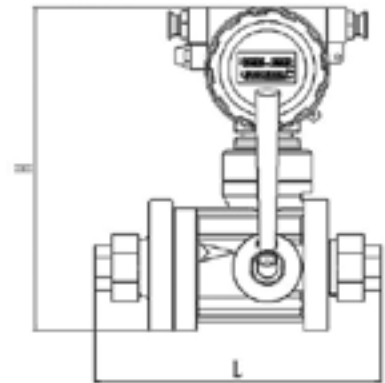
The MQMe Quantometer is a turbine gas meter that registers the operating volume using a nine-digit electronic index.

The flow of the gas to be measured causes the turbine rotor to rotate. The gas flow is narrowed on an annular cross section, is accelerated and directed onto the smooth-running Aluminum rotor. The number of rotations is proportional to the measured gas volume; the frequency of rotations is proportional to the actual gas flow.

The rotation of the rotor is transmitted via a magneto-resistance sensor from the gas pressurized area to the electronic index which is in the atmospheric environment. The CPU is receiving the high frequency signal for the magneto-resistance sensor to calculate the gas flow and gas volume under operating conditions. If the optional electronic volume corrector function is installed the gas flow and gas volume under standard conditions will be calculated according AGA NX-19. The calculation can be based on fixed factors for temperature and pressure or on optionally installed temperature and pressure sensors. The MQMe is designed to have one external temperature and one external pressure transmitter installed directly in the meter.

## Dimensions / Nominal size

	25 / 1"	25/1"	50 / 2"	80 / 3"	100 / 4"	150 / 6"
L [mm]	150	240	75	120	150	180
A [mm]	65	65	55	70	90	120
B [mm] no pump	55	55	65	90	100	120
B [mm] with pump	165	165	175	200	210	230
C [mm] no pump	120	120	120	160	190	240
C [mm] with pump	230	230	230	270	300	350
H [mm]	275	275	305	340	365	415
Weight [kg] no pump	5,4	6,0	4,3	6,7	8,4	13,0
Weight [kg] with pump	6,1	6,8	5,1	7,4	9,2	13,8





### Characteristics

PS	16 bar
Ambient temperature	-25 to +55 °C
Housing Material	aluminium
PED- Approval	Hpi / 222-103-Q-01
Reproducibility	< 0,2 %
Pressure change rate	< 0,35 bar/s
Gas specification	Gas families 1, 2, 3 (DVGW - G 260) and non-aggressive gases. Other gases on request.

### Versions

Nominal Size	G-Größe	Q <sub>min</sub> [m <sup>3</sup> /h]	Q <sub>max</sub> [m <sup>3</sup> /h]
25/1"	G 16	2,5	25
25/1"	G 25	4,0	40
50/2"	G 40	6,5	65
50/2"	G 65	10,0	100
80/3"	G 100	8,0	160
80/3"	G 160	12,5	250
80/3"	G 250	20,0	400
100/4"	G 160	12,5	250
100/4"	G 250	20,0	400
100/4"	G 400	32,0	650
150/6"	G 400	32,0	650
150/6"	G 650	50,0	1000
150/6"	G1000	80,0	1600

### Options

- several options to transmit the measured an calculated data to a digital control system (**DCS**) or SCADA
- equipped with alternatively RS 485 or M-Bus interface and one high frequency (**HF**) as well as one low frequency (**LF**) pulser
- if an external power supply is connected to the MQME one 4 to 20 mA configurable signal is available
- the rotation of the rotor can be scanned additionally with one external high frequency (**HF**) sensor
- the HF-sensor signal allows the determination of the actual gas flow in high-resolution and can be transmit to any digital control system (**DCS**) or SCADA for flow control purposes
- integrated electronic volume corrector

# NOTES

A series of horizontal dotted lines for writing notes.



# ENQUIRY FORM

To be able to answer your enquiry as quickly as possible, please complete as much as possible.

Title \_\_\_\_\_ First Name \_\_\_\_\_ Last name \_\_\_\_\_

Company \_\_\_\_\_

Street and number \_\_\_\_\_

PO box \_\_\_\_\_ Post code \_\_\_\_\_ Place \_\_\_\_\_

E-Mail \_\_\_\_\_ Country \_\_\_\_\_ Tel. \_\_\_\_\_

Fax \_\_\_\_\_ Mobile \_\_\_\_\_

Please tick the device type in question.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Gas pressure regulator                                       | <input type="checkbox"/> Rotary regulator          | <input type="checkbox"/> Vacuum regulator |
| <input type="checkbox"/> Overflow valve   | <input type="checkbox"/> Regulator for gas torches |   |
| <input type="checkbox"/> Gas pressure regulator with integrated safety shut-off valve | <input type="checkbox"/> Safety shut-off valve     |   |
| <input type="checkbox"/> Safety relief valve  |  |   |

Should you require a replacement device or spare parts, please tell us the fabrication number of your device.

Please tick the desired nominal size.

- |                                 |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> DN 25  | <input type="checkbox"/> DN 40  | <input type="checkbox"/> DN 50  |
| <input type="checkbox"/> DN 65  | <input type="checkbox"/> DN 80  | <input type="checkbox"/> DN 100 |
| <input type="checkbox"/> DN 150 | <input type="checkbox"/> DN 200 |                                 |

Please enter the relevant flow rate and pressures.

Inlet pressure  $p_u$  \_\_\_\_\_ Outlet pressure  $p_d$  \_\_\_\_\_

Flow rate \_\_\_\_\_ Pressure level \_\_\_\_\_

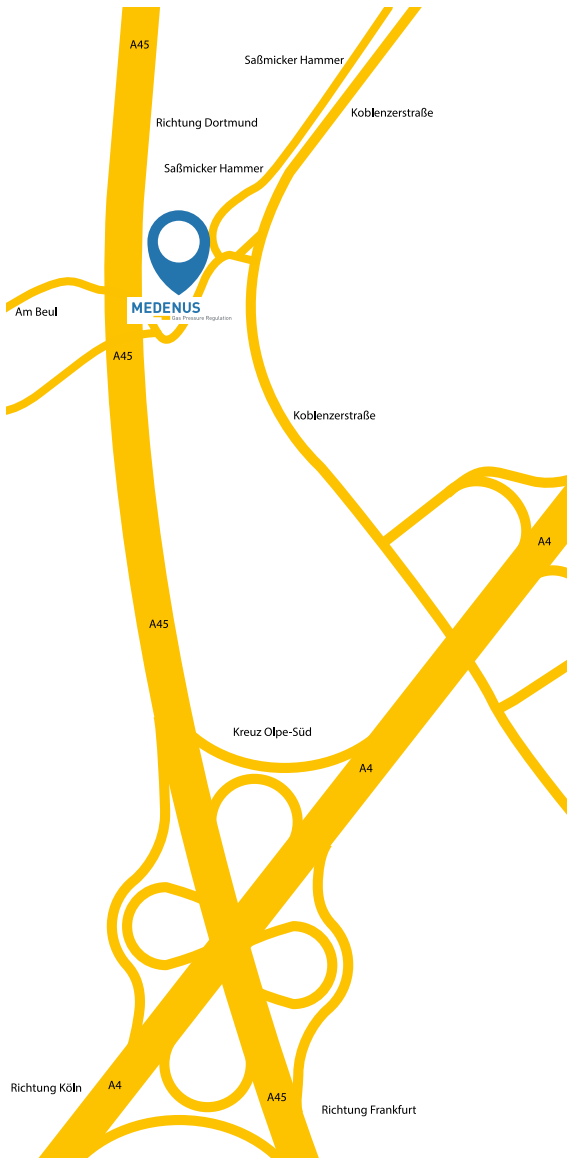
Please enter the relevant type of gas and the temperature range.

Type of gas \_\_\_\_\_ Temperature range \_\_\_\_\_

Notes / additional equipment (e.g.: Vent valve):

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# CONTACT



## Contact

If you want to know more about our products and services, please contact your local representative or visit our website at [www.medenus.de/en](http://www.medenus.de/en)

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### Worldwide Sales Agencies

Our worldwide sales agencies can be found on our internet site at [medenus.de/en/kontakt.html](http://medenus.de/en/kontakt.html)

# MEDENUS

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