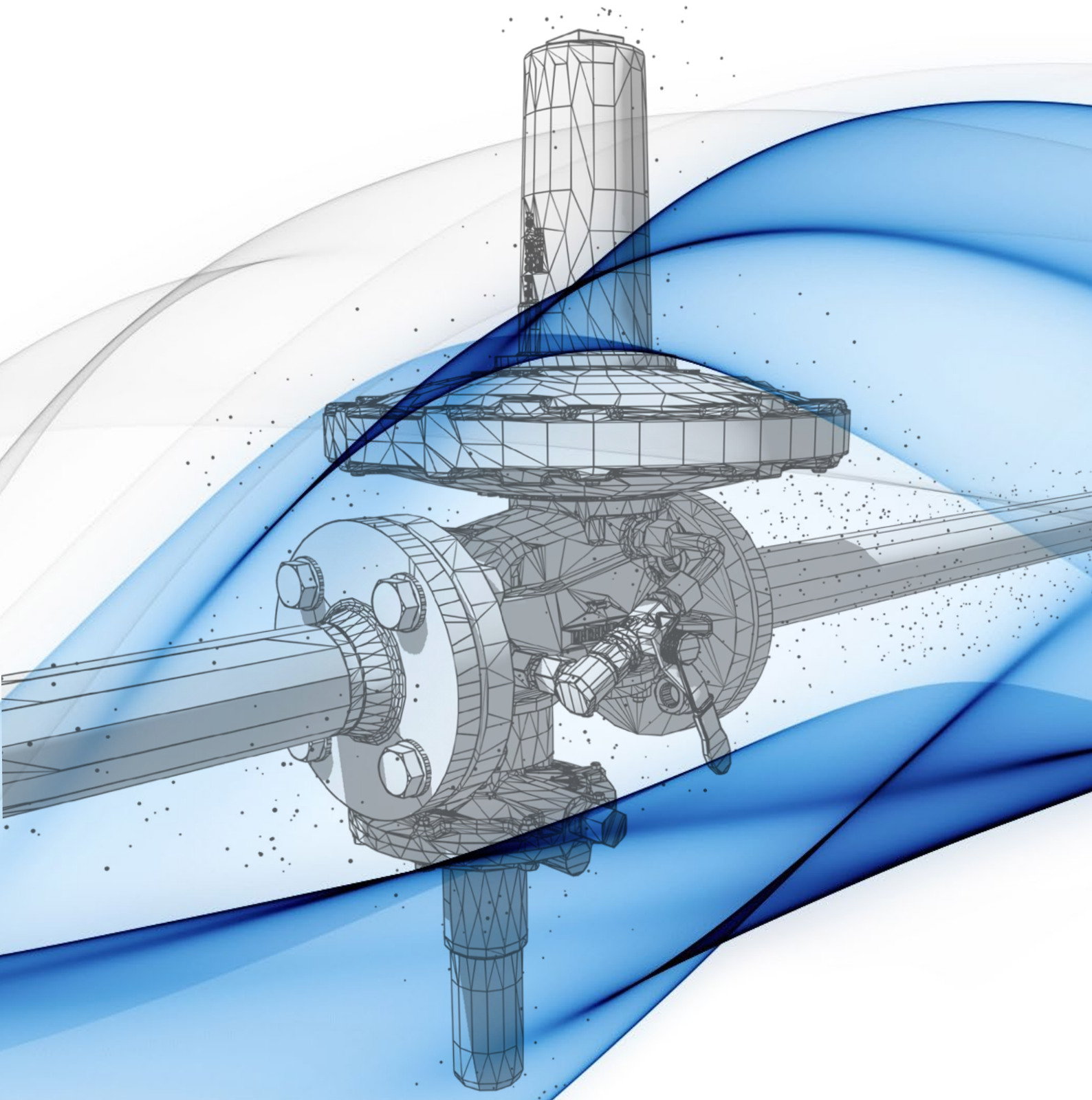


# MEDENUS

Gas Pressure Regulation



**GENERAL CATALOGUE**

**EN**

# PULL YOUR MEDENUS JOKER

## EXPRESS

YOU ARE IN A HURRY? WE ARE HAPPY TO HELP.

If you need your equipment even faster as our standard delivery time, please come back to us. After checking our stock we usually are able to deliver within one week via our express production line (+10% express fee).



### LIST OF ABBREVIATIONS AND SYMBOLS

AC	Accuracy class	$p_{d20}$	outlet pressure R70-20
ATC	Acceptance test certificate	$p_{d20/2}$	outlet pressure R70-20 with I/P converter 1:2 for follow setpoint adjustment
BV	Vent valve		
DN	Nominal size	$p_{d10}$	outlet pressure R70-10
DVGW	Deutsche Vereinigung des Gas- und Wasserfaches e.V.	$Q_n$	standard volumetric flow rate
f	conversion factor gases	$Q_{min}$	minimum volumetric flow rate
FPR	fluoro polymer rubber	$Q_{max}$	maximum volumetric flow rate
HD / ND	high-pressure / low-pressure (SAV)	RE	control unit
HDS	high-pressure screw spindle	RSD2	throttle valve
$H_{s,n}$	calorific value	SSV	safety shut-off valve
$K_G$	$K_G$ -Value	SRV	safety relief valve
$p_d$	outlet pressure	$t_{Gas}$	gas temperature
$p_{ds\ o,u}$	setpoint of the response pressure	VA	stainless steel
PS	maximum allowable pressure	$w_d$	outlet gas velocity
$p_u$	inlet pressure	$w_u$	inlet gas velocity
$p_{dF}$	pneumatic following target value of I/P converter	$\rho_n$	gas density
$p_{d100}$	outlet pressure R70-100	$\Delta p$	differential pressure

Subject to printing and typesetting errors, and to commercial and technical modifications reproduction is not permitted.

# TABLE OF CONTENTS

Information regarding the catalogue	4
MEDENUS history and new headquarters	6
Gas pressure regulation for hydrogen	8
<b>GAS PRESSURE REGULATOR WITHOUT INTEGRATED SAFETY SHUT OFF VALVE</b>	
Gas pressure regulator R 50	10
Gas pressure regulator R 51	12
Gas pressure regulator R 100	14
Rotary regulator R 100 U	16
Gas pressure regulator R 101	18
Overflow valve R 101 U	20
Overflow valve for gas torches R 101 US	22
Gas pressure regulator R 105	24
<b>GAS PRESSURE REGULATOR WITH INTEGRATED SAFETY SHUT OFF VALVE</b>	
Gas pressure regulator RS 250 / RS 251 PS 8 bar	26
Gas pressure regulator RS 254 / RS 255 PS 16 bar	30
<b>PILOT-OPERATED GAS PRESSURE REGULATOR WITH INTEGRATED SAFETY SHUT-OFF VALVE</b>	
Gas pressure regulator RP 105	34
Gas pressure regulator RSP 254 / RSP 255	36
<b>GAS PRESSURE REGULATOR WITH SIZE AND LENGTH COMPENSATION</b>	40
<b>GAS FILTER</b>	
Gas filter DF 50 PS 2/6 bar	42
Cellular gas filter DF 100 PS 16 bar	44
<b>SAFETY RELIEF VALVE</b>	
Safety relief valve SL 5	46
Safety relief valve SL 10	48
Safety relief valve SL 20	50
<b>SAFETY SHUT-OFF VALVE</b>	
Safety shut-off valve S 50	52
Safety shut-off valve S 100	54
Safety shut-off valve S 104	56
<b>ACCESSOIRES</b>	62
<b>TRADING GOODS</b>	
Flanged ball valves	64
Service and training	65
Contact	67



## INFORMATION REGARDING THE CATALOGUE

Please observe the following information when using this catalogue.

**The minimum order value per order is € 100.**

- **Selecting the devices:**

We are happy to assist you selecting the right devices out of our range, please get in contact with us with the contact details at the end of this catalogue (page 67).

- **Order changes:**

If it's necessary to change a current order after you received our order confirmation, we will charge a € 90 handling fee (plus additional expenses).

- **Cancellation costs:**

If an order cancellation is necessary we charge:

> 1 week before the delivery date: 25 %

< 1 week before the delivery date: 75 %

when ready for shipping: 100 %

- **Spare Parts:**

All spare parts for our products are on stock in Olpe.

On our website [www.medenus.de/fabrication-number-search](http://www.medenus.de/fabrication-number-search) you can look at the delivery specification and the required spare parts based on the device serial number (devices delivered after October 2006).

From there on you can send an inquiry directly to the Sales Team.

- We supply our standard documentation with every device (Invoice, operating and maintenance instructions and if ordered an acceptance test certificate (ATC) acc. to EN10204/3.1  
Additional documentation on request and by charge.

- **Special versions:**

If you can not find a suitable product in our catalogue, please feel free to contact us. We offer standard products as well as customized products. For further information please get in touch with us or have a look at our website.

- **Trainings:**

We offer standard seminars as well as customized ones. For further information please have a look at our webpage or get in touch with us.

# MEDENUS

Gas Pressure Regulation

Three years before a global player in silicon valley was founded, Dieter Medenus already recognized the possibility of producing gas pressure regulators in his own residence to meet a worldwide demand.

Within a few years, Dieter Medenus earned an international reputation due to his high quality level. MEDENUS grew into a brand - the company grew in the same way. Until the retirement of Mr. Medenus in 2004, he perfected the high quality standard of the regulators. Regulator quality remains our top priority. We create a wide range of controllers for worldwide use by combining high-quality materials with craftsmanship.. We guarantee a continuous and stable gas supply, whether a blast furnace, in a power plant or in city gas distribution.

**GERMAN QUALITY IN  
LEADING DELIVERY TIME.**

WE REGULATE IT.

[WWW.MEDENUS.DE](http://WWW.MEDENUS.DE)



1/2

Half year production capacity for standard devices in stock.



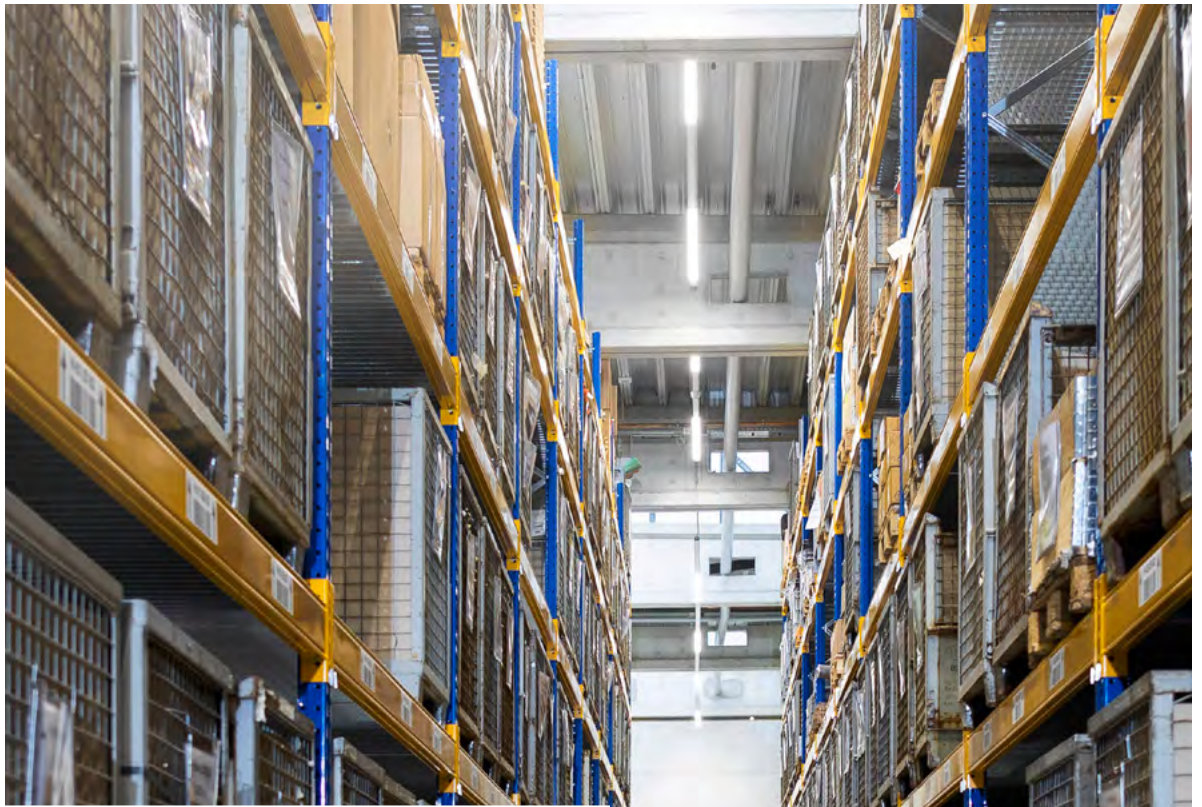
2-3

Weeks standard delivery time ex works.  
Express production within 1 week or shorter possible.



20.000 m<sup>2</sup>

large company property with modern storage and craft facilities.



# FACTS

MEDENUS has grown into a global brand. With the highest standards of quality and craftsmanship taken over from Mr. MEDENUS, Gas pressure regulators, filters, safety shut-off and safety relief valves have been perfected over decades. With our innovative tradition, we face today's energy transition and deliver hundreds of items already for hydrogen applications.



# 3.000 m<sup>2</sup>

Production area with modern office building and production area with huge stock and a modern office building

WE REGULATE IT.  
[www.medenus.de](http://www.medenus.de)

# GAS PRESSURE REGULATION FOR HYDROGEN

UP TO 16 BAR BY USING ALUMINIUM ALLOYS

Owing to the increasing importance of the topic regarding gas pressure regulation of hydrogen and contradictory statements regarding the use of aluminum alloys for these applications up to 16 bar, we, as MEDENUS Gas-Druckregeltechnik GmbH, have commissioned a comprehensive investigation and literature search by the university RWTH Aachen concerning this issue. The objective was to examine, first and foremost, the Aluminium alloys used by MEDENUS Gas-Druckregeltechnik, with the aim to investigate the open questions scientifically and to find answers.

The results of these investigations have shown that the alloys used by us can be used without restrictions for dry hydrogen up to an inlet pressure of 16 bar and represent an attractive alternative to conventional steel/cast iron and copper materials. Additional advantages are their substantially reduced weight, thus giving better handling and a higher corrosion class (C5-I) even without pain-

ting. This investigation focused specifically on the alloys used by MEDENUS and has no validity for other aluminum materials.

The specific T6 heat treatment of the alloy mentioned in the report is also in use for MEDENUS devices and is implemented by one of Europe's most advanced aluminum foundries, Ohm and Häner in Olpe, Germany. The owners of the foundry are also the owners of MEDENUS, thus giving rise to further positive synergies.

The alloys that were examined are used at MEDENUS not only for spring-loaded (R and RS series) but also for pilot-controlled gas pressure regulators (RSP series), cellular gas filters (DF 100 series), and safety relief valves (SL series) in all nominal widths up to DN 200.

The specific pressure and tightness test for hydrogen applications is done at MEDENUS with helium as the test medium.



Pilot operated  
Gas Pressure Regulator  
RSP 254 with expansion

## QUESTION

The hypoeutectic aluminium cast alloy AlSi7Mg0.3 (EN-AC 42100) is being used widely in the automotive industry or aviation and aerospace technologies and is also being used for safety-relevant structural components. This range of applications is due to the favourable properties of the material, such as low density, good casting properties, good mechanical properties in the heat-treated state, and generally good corrosion resistance.

Previously, steel casting, cast iron, and brass materials have been used as material for gas pressure regulation fittings for hydrogen. However, due to the attractive properties of AlSi7Mg0.3 and based on the literature of the last 20 years, the suitability of the material for such an application shall now be investigated focusing especially on the risk caused by hydrogen embrittlement.

## SUMMARY AND FORECAST

for the application of castings made of AlSi7Mg0.3 ST6 in gas pressure regulation fittings for dry hydrogen gas atmosphere.

The cast alloy AlSi7Mg0.3 ST6 has a potentially lower number of hydrogen traps in the microstructure compared with 7xxx alloys that are susceptible to EAC and stress corrosion. In contrast, 6xxx alloys are being used as lining for high-pressure hydrogen tanks. Due to the proximity of the aluminum cast alloy mentioned to 6xxx wrought alloys in terms of microstructure and chemistry and on the basis of the extensive literature search performed, it must be assumed that AlSi7Mg0.3 ST6 will have similar resistance and be stable in a dry hydrogen atmosphere. Moreover, there is no evidence for any drawbacks compared with steel castings and spheroidal graphite cast iron.



Accordingly, the combination of favorable mechanical processing and corrosion properties of the alloy AlSi7Mg0.3-S/K-T6 makes this material an attractive alternative to conventional steel/cast iron and also copper materials in gas pressure regulation fittings for dry hydrogen gas, used for pressures of up to 16 bar.



### AUTHOR OF THE EXPERTISE OF THE RWTH AACHEN:

Univ. Prof. Dr.-Ing. Daniela Zander

Find the complete article as a download in the service area on our website.

# R 50 | GAS PRESSURE REGULATOR

FOR SIMPLE APPLICATIONS WITH STABLE INPUT PRESSURE ( $\pm 5\%$ )

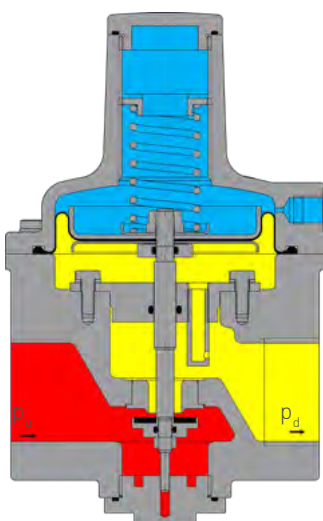


## DESIGN AND FUNCTION

The gas pressure regulator R 50 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits. 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 recognized 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.



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 3 bar
OUTLET PRESSURE $p_d$	200 mbar - 1.200 mbar
Rp 1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp 1 1/2"; Rp 2": $Q_{max}$	300 Nm <sup>3</sup> /h
PS	5 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]
DN 25 Rp 1"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 1.200
DN 40 Rp 1 1/2"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 1.200
DN 50 Rp 2"	Standard	200 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 1.200

## VALVE DIAMETER

NOMINAL SIZE	VALVE DIAMETER [mm]
DN 25 Rp 1"	11,0
	15,0
	20,0
DN 40 Rp 1 1/2"	15,0
	25,0
DN 50 Rp 2"	15,0
	25,0

## OPTIONS

- Suitable for oxygen
- Vent valve (BV) for breather connection (for non-dynamic applications)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation)
- Helium leak test for hydrogen applications
- NPT thread upon request

## INFO

Questions about the R50?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our [webpage products.medenus.de/R50](http://webpage.products.medenus.de/R50)



# R 51 | GAS PRESSURE REGULATOR

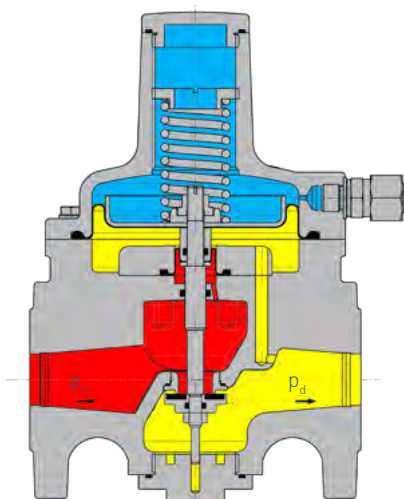


## DESIGN AND FUNCTION

The gas pressure regulator R 51 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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.



## CHARACTERISTICS

INLET PRESSURE $p_u$	16 bar
OUTLET PRESSURE $p_d$	20 mbar - 3.000 mbar < 40 mbar (mounted head down)
$K_G$ -VALUE	175 m <sup>3</sup> /(h*bar)
PS	16 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5 - Class 150RF



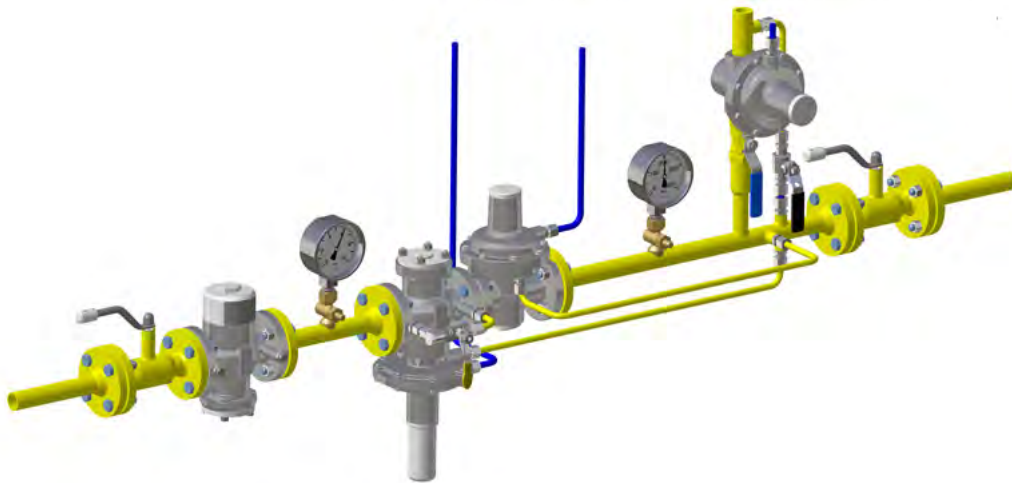
## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]
DN 25	Standard	20 - 400
	High-pressure version	401 - 1.000
	High-pressure version with HDS	1.001 - 3.000

## OPTIONS

- External measuring connection<sup>1</sup>
- Vent valve (BV) for breather connection (for non-dynamic applications)<sup>2</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (<10 bar; oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.



<sup>1</sup> With an internal impulse line, the accuracy class (AC) can only be reached at  $Q_n < 100 \text{ Nm}^3/\text{h}$ .

<sup>2</sup> Not suitable for hydrogen applications.

## INFO

Questions about the R51?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R51](http://products.medenus.de/R51)



# R 100 | GAS PRESSURE REGULATOR



## DESIGN AND FUNCTION

The gas pressure regulator R 100 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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

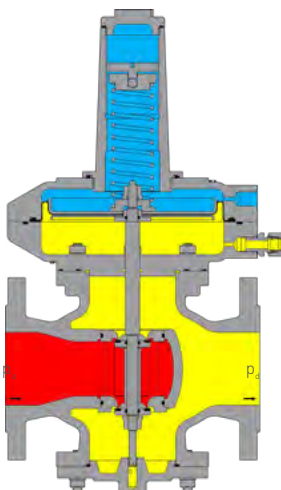
be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve 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.



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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <sup>3</sup> /(h*bar)]
DN 50	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 - 100,0	12.000
DN 200	90,0 - 90,0	10.000
	125,0 - 130,0	20.200



## 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 sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 50	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 80	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 100	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 150	with RE 385	8 - 350	350 - 850
	with RE 275	350 - 850	850 - 1.200
DN 200*	with RE 385	8 - 350	350 - 850
	with RE 275	350 - 850	850 - 1.200

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Safety diaphragm (SM) for the control device<sup>1</sup>
- Valve disc VA and sealings FKM e.g. for biogas applications
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

## INFO

Questions about the R100?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R100](http://products.medenus.de/R100)



# R 100 U | ROTARY REGULATOR



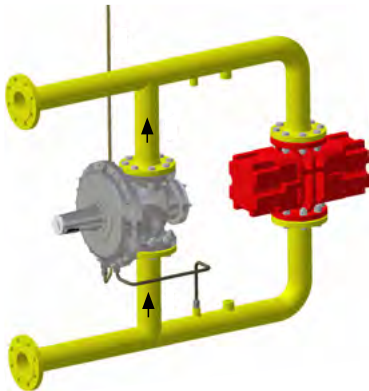
## DESIGN AND FUNCTION

The spring-loaded gas pressure regulator R100 U has the function of keeping the outlet pressure of a gaseous medium constant within allowable limit values in the connected regulation section on the outlet side, independently of the effect of interferences, such as changes in the inlet pressure and/or in the gas tap. The gas pressure regulator is composed of the actuator housing and the "diaphragm assembly plus actuator".

The actuator for the diaphragm assembly can be produced in various valve seat diameters to suit different nominal widths. The gas flows through the actuator

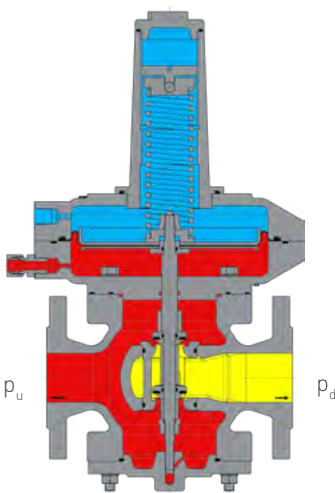
housing in the direction of the arrow. The external measurement line port is used to pass the outlet pressure to be regulated to the bottom of the main diaphragm of the diaphragm assembly.

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 screw spindle to the actuator, which is adjusted in a way that the actual value is adjusted to the setpoint. In case of zero tap, the actuator will close tight, causing the closing pressure to be established.



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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <sup>3</sup> /(h*bar)]
DN 50	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 - 100,0	12.000
DN 200	90,0 - 90,0	10.000
	125,0 - 130,0	20.200



## CHARACTERISTICS

OPENING PRESSURE $p_u$	8 - 1.200 mbar
BACK PRESSURE $p_d$	$< p_u$
PS	8 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 50	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 80	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 100	with RE 390	8 - 130	130 - 450
	with RE 275	130 - 450	450 - 1.100
	with RE 160	450 - 1.200	-
DN 150	with RE 385	8 - 350	350 - 850
	with RE 275	350 - 850	850 - 1.200
DN 200*	with RE 385	8 - 350	350 - 850
	with RE 275	350 - 850	850 - 1.200

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Safety diaphragm for the control device (SM)<sup>1</sup>
- Valve disc VA and sealings FKM e.g. for biogas applications
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

## INFO

Questions about the R100 U?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R100U](http://products.medenus.de/R100U)



# R 101 | GAS PRESSURE REGULATOR



## DESIGN AND FUNCTION

The gas pressure regulator R 101 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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 re-

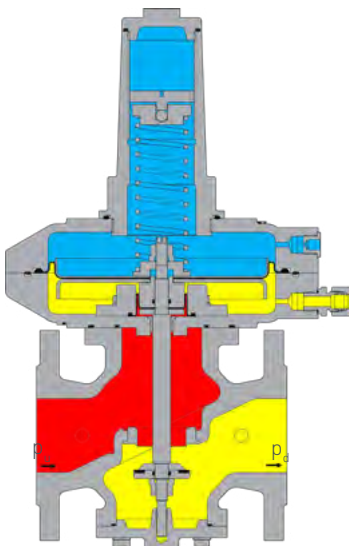
gulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve 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.



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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <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



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 8 bar
OUTLET PRESSURE $p_d$	8 - 3.000 mbar
PS	8 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 25	with RE 330	22 - 200	200 - 800
	with RE 205	200 - 750	750 - 1.200
	with RE 160	750 - 1.200	-
DN 40	with RE 330	22 - 200	200 - 800
	with RE 205	200 - 750	750 - 1.200
	with RE 160	750 - 1.200	-
DN 50	with RE 390	22 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 1.200
DN 65	with RE 390	22 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 1.200
DN 100	with RE 485	22 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275	350 - 850	850 - 1.200

## OPTIONS

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Safety diaphragm for the control device (SM)<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

## INFO

Questions about the R101?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R101](https://products.medenus.de/R101)



# R 101 U | OVERFLOW VALVE

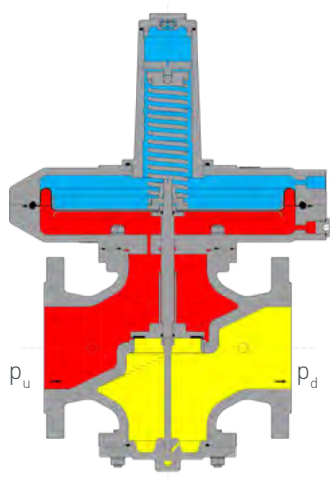


## DESIGN AND FUNCTION

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 (Ø 8 mm). 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.

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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m³/(h*bar)]
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



## CHARACTERISTICS

OPENING PRESSURE $p_u$	50 mbar
BACKPRESSURE	atmospheric
PS	8 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

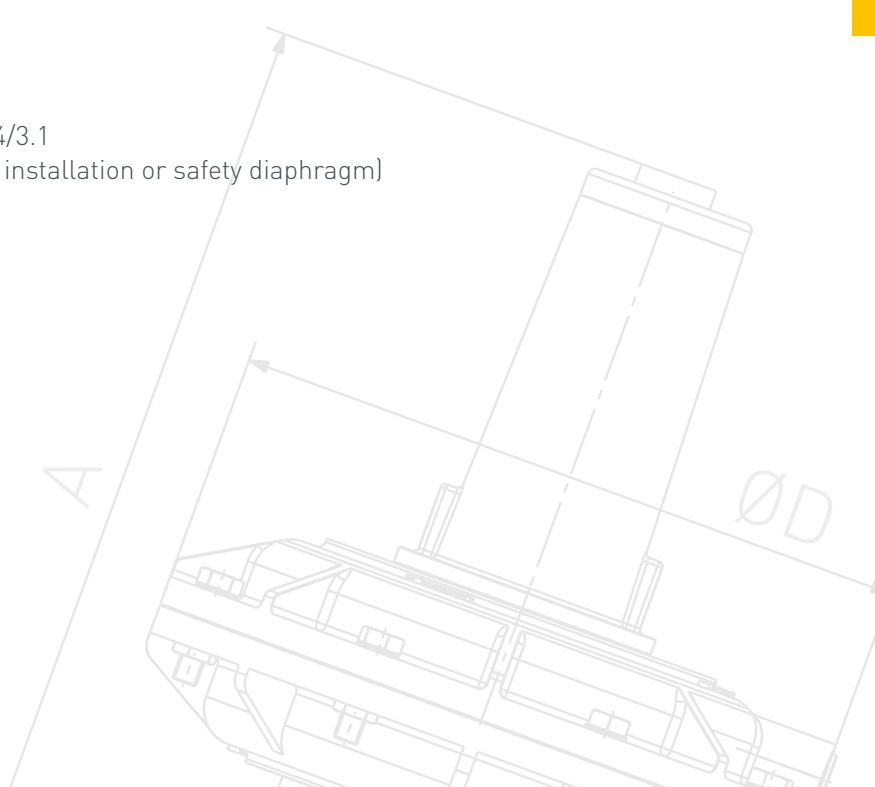
NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]
DN 50	with RE 390	5 - 50
DN 65	with RE 390	5 - 50
DN 80	with RE 390	5 - 50
DN 100	with RE 390	5 - 50
DN 125	with RE 390	5 - 50
DN 150	with RE 385	5 - 50
DN 200*	with RE 385	5 - 50

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.



### NOTE ON DEVICE SELECTION GAS PRESSURE REGULATOR R 101 U

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.

## INFO

Questions about the R101 U?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R101U](https://products.medenus.de/R101U)



# R 101 US | OVERFLOW VALVE FOR GAS TORCHES

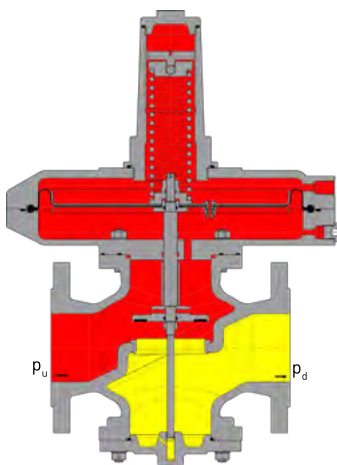


## DESIGN AND FUNCTION

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 diaphragm. As a result, higher pressure builds up under the diaphragm, resulting in the valve being opened.

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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <sup>3</sup> /(h*bar)]
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



## CHARACTERISTICS

OPENING PRESSURE $p_u$	5 - 50 mbar
BACKPRESSURE $p_d$	atmospheric
PS	8 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

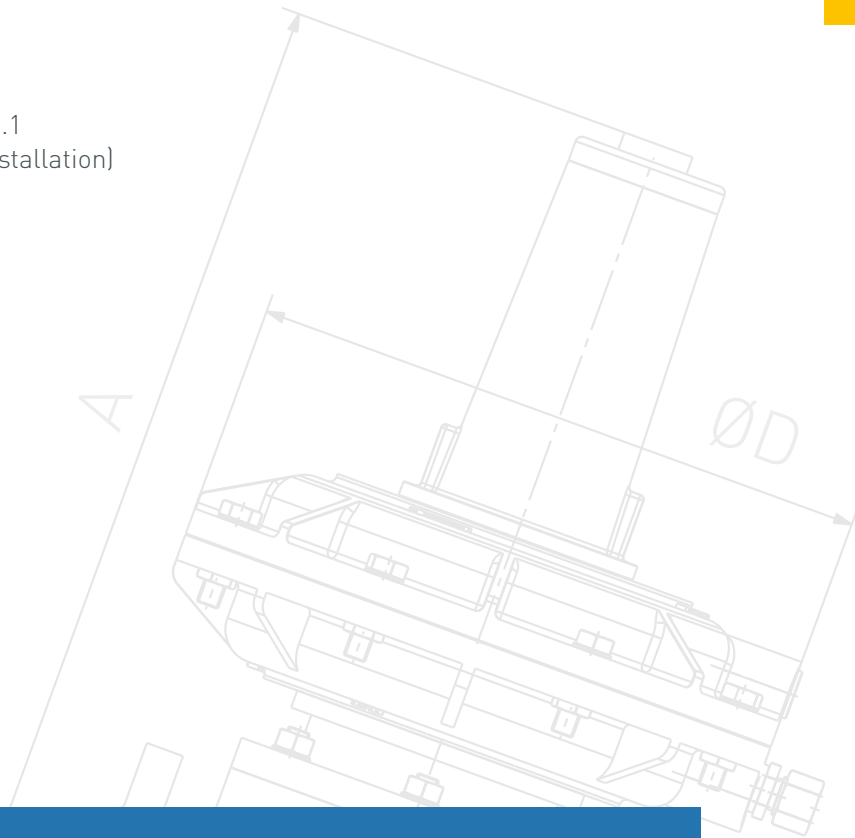
NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]
DN 50	with RE 390	5 - 50
DN 65	with RE 390	5 - 50
DN 80	with RE 390	5 - 50
DN 100	with RE 390	5 - 50
DN 125	with RE 390	5 - 50
DN 150	with RE 385	5 - 50
DN 200*	with RE 385	5 - 50

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation)
- Helium leak test for hydrogen applications

For more standard options, see page 62.



### NOTE ON DEVICE SELECTION GAS PRESSURE REGULATOR R 101 US

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.

## INFO

Questions about the R101 US?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R101US](https://products.medenus.de/R101US)



## DESIGN AND FUNCTION

The gas pressure regulator R 105 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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 re-

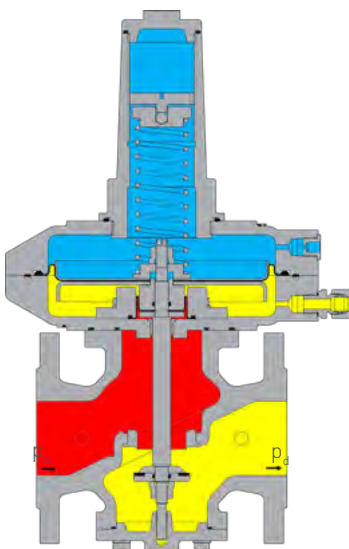
gulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve 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.



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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <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



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 16 bar
OUTLET PRESSURE $p_d$	8 - 3.000 mbar
PS	16 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 25	with RE 330	22 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
	with RE 160	750 - 1.200	-
DN 40	with RE 330	22 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
	with RE 160	750 - 1.200	-
DN 50	with RE 390	22 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 65	with RE 390	22 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 100	with RE 485	22 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275	350 - 850	850 - 3.000

## OPTIONS

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Safety diaphragm for the control device (SM)<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (<10 bar, oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

## INFO

Questions about the R105?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/R105](https://products.medenus.de/R105)



# RS 250 / RS 251 | GAS PRESSURE REGULATOR

WITH INTEGRATED SAFETY SHUT-OFF VALVE WITH A MAXIMUM INLET PRESSURE OF 8 BAR



## DESIGN AND FUNCTION

The gas pressure regulator RS 250 / RS 251 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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.

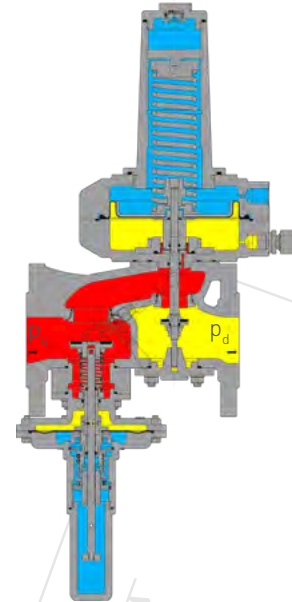
The gas flows through the actuator housing in the direction of the arrow. The measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve 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. 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. Therefore, 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 rod, 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
OUTLET PRESSURE $p_d$	18 - 3.000 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
SSV $p_{dso}$	50 - 8.000 mbar
SSV $p_{dsu}$	5 - 1.000 mbar
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



### $K_G$ -VALUE [ $m^3/(h \cdot bar)$ ]

	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	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			

## INFO

Questions about the RS250 or RS251?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/RS250](https://products.medenus.de/RS250) or [products.medenus.de/RS251](https://products.medenus.de/RS251)



## VERSIONS RS 250

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 25	with RE 330	18 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
DN 50	with RE 330	18 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
DN 80	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 100	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 150	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000
DN 200	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000

## VERSIONS RS 251

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 50	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 80	with RE 385	18 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000
DN 100	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000

### OPTIONS REGULATOR

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Noise reduction equipment
- Safety diaphragm (SM) for the control device<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

### OPTIONS SSV

- High-pressure SSV (pdso > 3.500 mbar)
- Low-pressure SSV<sup>2</sup>
- 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)

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.

# RS 254 / RS 255 | GAS PRESSURE REGULATOR

WITH INTEGRATED SAFETY SHUT-OFF VALVE WITH A MAXIMUM INLET PRESSURE UP TO 16 BAR



## DESIGN AND FUNCTION

The gas pressure regulator RS 254 / RS 255 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. 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.

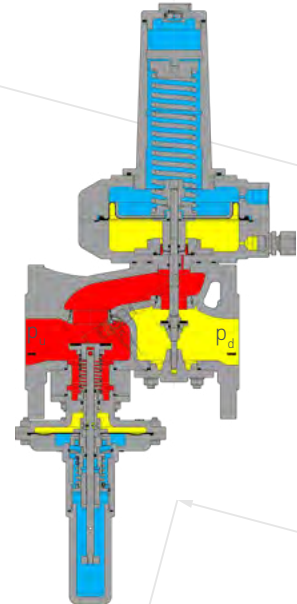


The gas flows through the actuator housing in the direction of the arrow. The measurement line port is used to pass the outlet pressure to be regulated to the bottom of the diaphragm comparator of the diaphragm assembly. It compares the actual value with the command variable preset by the force of the setpoint spring. The setpoint required in each case is set via the setting screw. Any deviation from the setpoint is transmitted by the valve 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. 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. Therefore, 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 rod, 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. 16 bar
OUTLET PRESSURE $p_d$	18 - 3.000 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
SSV $p_{dso}$	50 - 14.000 mbar
SSV $p_{dsu}$	5 - 1.000 mbar
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



### $K_G$ -VALUE [ $m^3/(h*bar)$ ]

	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	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			

## INFO

Questions about the RS 254 or RS 255?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/RS254](http://products.medenus.de/RS254) or [products.medenus.de/RS255](http://products.medenus.de/RS255)



## VERSIONS RS 254

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE(HDS-OPTION) [mbar]
DN 25	with RE 330	18 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
DN 50	with RE 330	18 - 200	200 - 800
	with RE 205	200 - 750	750 - 3.000
DN 80	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 100	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 150	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000
DN 200	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000

## VERSIONS RS 255

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]	WITH HIGH-PRESSURE SCREW SPINDLE (HDS-OPTION) [mbar]
DN 50	with RE 390	18 - 130	130 - 450
	with RE 275	130 - 400	400 - 1.100
	with RE 205	400 - 750	750 - 3.000
DN 80	with RE 385	18 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000
DN 100	with RE 485	18 - 150	150 - 450
	with RE 385	150 - 350	350 - 850
	with RE 275-2	350 - 850	850 - 3.000

## OPTIONS REGULATOR

- High-pressure screw spindle (HDS) for convenient and accurate setting of the regulator despite high spring forces
- Noise reduction equipment
- Safety diaphragm (SM) for the control device<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (<10 bar; oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

## OPTIONS SSV

- High-pressure SSV (pdso > 3.500 mbar)
- Low-pressure SSV<sup>2</sup>
- Vent valve (BV) for breather connection
- SSV position indicator
  - Inductive or 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)

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.

# RP 105 | GAS PRESSURE REGULATOR



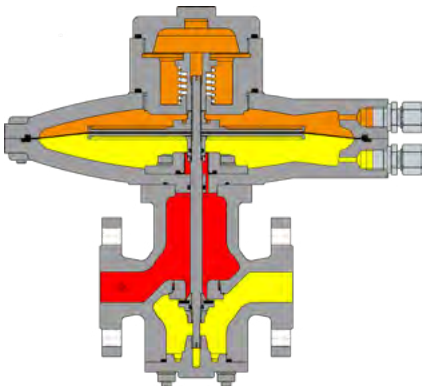
WITH INTEGRATED SAFETY SHUT-OFF VALVE WITH A MAXIMUM INLET PRESSURE OF 16 BAR

## DESIGN AND FUNCTION

The gas pressure regulator RP105 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. The required auxiliary energy is obtained from the pressure gradient between the inlet pressure and outlet pressure of the gas pressure regulator; no external energy is required. The regulator consists of the regulating unit, optionally connected upstream to a fine filter and bypass valve. The control variable - the outlet pressure - is detected by a sensitive diaphragm in the regulating unit, which is part of a double-diaphragm system. The pneumatic amplifier working by the nozzle/baffle plate principle is actuated by the comparator formed by the double-diaphragm system. The bypass valve and possible changes in the setpoint spring can be used to affect the static amplification of the regulator and adjust it to the respective condition of a regulation section.



The outlet pressure is applied to the top side of the double-diaphragm system in the regulating unit via a measurement line, converted into a pressure force and compared with the setpoint spring force as command variable. Any deviation from the control value is followed by a suitable proportional change in the spacing between nozzle and baffle plate, corresponding to a proportional change in the setting pressure. The valve opening required in each case for adjusting the outlet pressure actual value to the setpoint is effected by the setting pressure generated by the actuating drive of the actuator. In the operating state, the inlet pressure flows as auxiliary energy through the nozzle/baffle plate system and the bypass valve into the outlet pressure chamber. It is generating the setting pressure for the valve opening position required in each case against the bypass valve, depending on the position of the nozzle/baffle plate system. The auxiliary energy gas then flows back to the outlet pressure network via the bypass valve. In case of zero tap of the regulation section, the amplifier valve in the double-diaphragm system of the regulating unit will close tight, causing the closing pressure to be established.



Models with pneumatic follow-up setpoint inputs with 1:1 and 1:2 pressure conversions are available. Using IP converters allows you to continuously set directly the required outlet pressure setpoint via, for example, 4 to 20 mA signals. Moreover, by means of a setting spring, variable zero points can be suppressed.



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 16 bar
OUTLET PRESSURE $p_d$	10 - 13.000 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF

## $K_G$ -VALUE [ $m^3/(h \cdot bar)$ ]

RP 105					
	DN 25	DN 40	DN 50	DN 65	DN 100
17,5	200	220			
27,5	460	600			
32,5		750	1.000	1.000	
42,5			1.500	1.500	
52,5			1.800	1.800	
65,0					3.500
95,0					5.800

## INFO

Questions about the RP 105?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/RP105](https://products.medenus.de/RP105)



## VERSIONS PILOTREGLER R70

DESCRIPTION	OUTLET PRESSURE RANGES [mbar]
R70-10	300 - 13.000
R70-20 (1:1 oder 1:2 mit integriertem Verstärker)	0 - 6.500
R70-100	0 - 500

## OUTLET PRESSURE RANGE AND SIZES ACTUATOR A 105

VERSIONS		OUTLET PRESSURE RANGES [mbar]		
NOMINAL SIZE	DESCRIPTION	R70-10	R70-20 (1:2)	R70-100
DN 25	with RE 330	500 - 6.500	200 - 13.000	10 - 500
DN 40	with RE 330	500 - 6.500	200 - 13.000	10 - 500
DN 50	with RE 390	500 - 6.500	200 - 13.000	10 - 500
DN 65	with RE 390	500 - 6.500	200 - 13.000	10 - 500
DN 100	with RE 385	500 - 6.500	200 - 13.000	10 - 500

## OPTIONS REGULATOR

- Fine filter (FF) upstream of the pilot regulator
- Noise reduction equipment
- Vent valve (BV) for the pilot<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (<10 bar; oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications



CE

Digital Height Gage

Measuring Range:

0—200 mm/8"

0—300 mm/12"

Power: SR44

# RSP 254 / RSP 255



## PILOT CONTROLLED GAS PRESSURE REGULATOR

WITH INTEGRATED SAFETY SHUT OFF VALVE (RSP) OR WITHOUT (RP) UP TO 16 BAR



### DESIGN AND FUNCTION

The gas pressure regulator RSP 254 / RSP 255 has the function of keeping the outlet pressure of a regulation section downstream of a gas pressure regulator constant within specified limits, independently of changes in the gas tap or inlet pressure. The required auxiliary energy is taken from the pressure gradient between the inlet pressure and the outlet pressure of the gas pressure regulator, no external energy is required. The regulator consists of the control stage, optionally with a fine filter and a downstream valve. The control variable is measured via a diaphragm in the control stage, which is part of a double-diaphragm system. The pneumatic amplifier operating according to the nozzle baffle plate principle is actuated by this comparator.

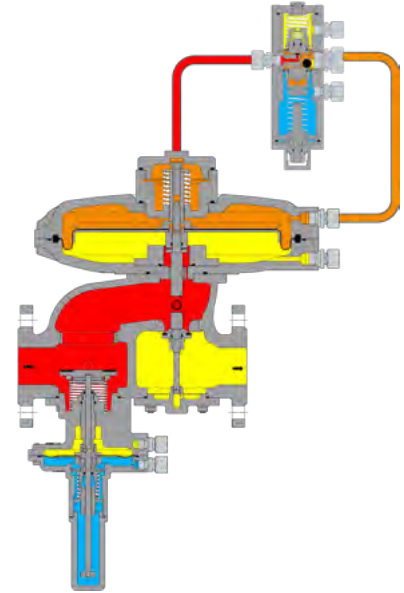
The static gain of the controller can be influenced via the discharge valve and possibly setpoint spring changes and adapted to the respective conditions of a control section. The output pressure is conducted via the measuring line to the upper side of the double-diaphragm system in the regulating stage, thereby resulting in a compressive force and compared with the adjusted setpoint value of the force as a predetermined guide variable for the output pressure to be regulated. If the control loop is taken off at zero, the amplifier valve closes in the double diaphragm system of the control stage, the closing pressure is established. Versions with pneumatic following setpoint inputs with pressure ratios 1:1 and 1:2 are available. For example: With an I/P converter and a 4-20 mA signal you can adjust the outlet pressure remotely.

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. Therefore, 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 rod, 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. 16 bar
OUTLET PRESSURE $p_d$	10 - 13.000 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
SSV $p_{dso}$	50 - 14.000 mbar
SSV $p_{dsu}$	5 - 1.000 mbar
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## K<sub>6</sub>-VALUE [m<sup>3</sup>/(h\*bar)]

	RSP 254						RSP 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	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			

## INFO

Questions about the RSP 254 / RSP 255?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/RSP254](http://products.medenus.de/RSP254) or [products.medenus.de/RSP255](http://products.medenus.de/RSP255)



## VERSIONS PILOT CONTROLLER R 70

DESCRIPTION	OUTLET PRESSURE RANGE
R 70-10	500 - 12.000
R 70-20 (1:1 or 1:2 with integrated amplifier)	100 - 6.000
R 70-100	10 - 500

## OUTLET PRESSURE RANGE AND SIZES ACTUATOR A(S) 254

VERSIONS		OUTLET PRESSURE RANGE [mbar]		
NOMINAL SIZE	DESCRIPTION	R70-10	R70-20 (1:2)	R70-100
DN 25	with RE 330	500 - 6.500	200 - 13.000	10 - 500
DN 50	with RE 330	500 - 6.500	200 - 13.000	10 - 500
DN 80	with RE 390	500 - 6.500	200 - 13.000	10 - 500
DN 100	with RE 390	500 - 6.500	200 - 13.000	10 - 500
DN 150	with RE 385	500 - 6.500	200 - 13.000	10 - 500
DN 200	with RE 385	500 - 6.500	200 - 13.000	10 - 500

## OUTLET PRESSURE RANGE AND SIZES ACTUATOR A(S) 255

VERSIONS		OUTLET PRESSURE RANGE [mbar]		
NOMINAL SIZE	DESCRIPTION	R70-10	R70-20 (1:2)	R70-100
DN 50	with RE 390	500 - 6.500	200 - 13.000	10 - 500
DN 80	with RE 385	500 - 6.500	200 - 13.000	10 - 500
DN 100	with RE 385	500 - 6.500	200 - 13.000	10 - 500

## OPTIONS REGULATOR

- Fine filter (FF) in front of the pilot
- Noise reduction equipment
- Vent valve (BV) for the pilot<sup>1</sup>
- Throttle valve (RSD2) for the breathing port on SSV
- Suitable for oxygen (< 10bar; oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications

## OPTIONS SSV

- High-pressure SSV (pdso > 3.500 mbar)
- Low-pressure SSV<sup>2</sup>
- Vent valve (BV) for breather connection
- SSV position indicator
  - Inductive or 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)

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.

# GAS PRESSURE REGULATOR

WITH FITTINGS FOR LENGTH OR NOMINAL SIZE COMPENSATION



In order to save costly and time consuming mechanical modifications, we also offer a variety of pipe fittings to compensate the length or the nominal size.

## OPTION

- Pipe fitting and regulator completely mounted (fittings are standardly delivered as a loose part)



EXAMPLES

# PILOT OPERATED REGULATOR WITH NOMINAL SIZE COMPENSATION

## TECHNICAL SPECIFICATION – RSP 254 WITH WIDENING

NOMINAL SIZE	INSTALLATION LENGTH REGULATOR	LENGTH PIPE FITTING	OVERALL LENGTH	VALVE DIAMETER (mm)	K <sub>G</sub> -VALUE
DN 50/100	230 mm	+ 220 mm	450 mm	17,5	220
				27,5	500
				32,5	750
DN 80/150	310 mm	+ 190 mm	500 mm	27,5	550
				32,5	850
				42,5	1.450
DN 100/200	350 mm	+ 300 mm	650 mm	27,5	600
				32,5	900
				42,5	1.500
				52,5	1.800

## TECHNICAL SPECIFICATION – RSP 255 WITH WIDENING

NOMINAL SIZE	INSTALLATION LENGTH REGULATOR	LENGTH PIPE FITTING	OVERALL LENGTH	VALVE DIAMETER (mm)	K <sub>G</sub> -VALUE
DN 50/100	310 mm	+ 140 mm	450 mm	27,5	550
				32,5	750
				42,5	1.250
				52,5	1.700
DN 80/150	410 mm	+ 90 mm	500 mm	42,5	1.500
				52,5	1.800
				65	2.600
				85	3.500
DN 100/200	480 mm	+ 170 mm	650 mm	42,5	1.500
				52,5	1.850
				65	3.200
				85	4.300
				95	4.800

# SPRING LOADED REGULATOR WITH LENGTH COMPENSATION

## SPRING LOADED REGULATOR WITH EXTENSION, E.G.

TYPE	NOMINAL SIZE	LENGTH REGULATOR [mm]	EXTENSION [mm]	OVERALL LENGTH [mm]
RS 250 / 254	DN 50	230	not needed	230
RS 250 / 254	DN 80	310	110	420
RS 250 / 254	DN 100	350	150	500

Other pipe fittings for length or nominal size compensation upon request

# DF 50 | GAS FILTER



## DESIGN AND FUNCTION

The gas flows through the inlet flange into the filter housing. 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. Up to DN 100 the housing material is aluminium die cast, beyond DN 100 Aluminium sand cast.



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 6 bar
PS	Rp 1/2" to DN 150: max. 6 bar DN 200 - DN 300: max. 2 bar
DEGREE OF SEPARATION	30 $\mu$ m standard, 5 $\mu$ m optional
AMBIENT TEMPERATURE	-40 °C to +80°C
HOUSING MATERIAL	up to DN 100 aluminium die cast > DN 100 Aluminium sand cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
CONNECTIONS	NPT thread optional, flange sets for screw-in thread 1.5" (DN40) and 2" (DN50) optionally available flange DN 65-DN 300 (ISO 7005)



NOMINAL SIZE	DESCRIPTION	PS
Rp 1/2"	Gas filter DF 50	6 bar
Rp 3/4"	Gas filter DF 50	6 bar
Rp 1"	Gas filter DF 50	6 bar
Rp 1 1/4"	Gas filter DF 50	6 bar
Rp 1 1/2"	Gas filter DF 50	6 bar
Rp 2"	Gas filter DF 50	6 bar
DN 65	Gas filter DF 50	6 bar
DN 80	Gas filter DF 50	6 bar
DN 100	Gas filter DF 50	6 bar
DN 125	Gas filter DF 50	6 bar
DN 150	Gas filter DF 50	6 bar
DN 200	Gas filter DF 50	2 bar
DN 250	Gas filter DF 50	2 bar
DN 300	Gas filter DF 50	2 bar

Please find the related pressure loss of the devices in the product information leaflet on our website.

### OPTIONS

- 5 µm degree of separation
- Biogas or coke oven gas version (max. 0,1 % H<sub>2</sub>S)
- Black epoxy coating
- Acceptance test certificate (ATC) to EN 10204/3.1
- Flange set DN40 or DN50 for threaded versions Rp 1 1/2" and Rp 2"
- Hydrogen version

For more standard options, see page 62.

## INFO

Questions about the DF 50?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/DF50](https://products.medenus.de/DF50)



# DF 100 | CELLULAR GAS FILTER

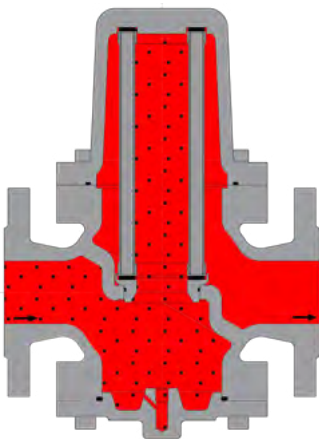


## DESIGN AND FUNCTION

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
DEGREE OF SEPARATION	99,9% > 2 $\mu$ m
AMBIENT TEMPERATURE	-20 °C to +60 °C optional -40 °C to +70 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF in DN 25 - DN 200



## VERSIONS

NOMINAL SIZE	DESCRIPTION	PS
DN 25	Cellular gas filter DF 100	16 bar
DN 50	Cellular gas filter DF 100	16 bar
DN 80	Cellular gas filter DF 100	16 bar
DN 100	Cellular gas filter DF 100	16 bar
DN 150	Cellular gas filter DF 100	16 bar
DN 200	Cellular gas filter DF 100	16 bar

Please find the related pressure loss of the devices in the product information leaflet on our website.

## OPTIONS

- Differential pressure gauge equipped with reed contact and 2 shut-off ball valves
- Temperature range -40°C to +70°C
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- Helium leak test for hydrogen applications
- Assembly kit

For more standard options, see page 62.



## INFO

Questions about the DF 100?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our [webpage products.medenus.de/DF100](http://webpage.products.medenus.de/DF100)



# SL 5 | SAFETY RELIEF VALVE

FOR SIMPLE APPLICATIONS



## DESIGN AND FUNCTION

The spring-loaded safety relief valve SL 5 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.

## CHARACTERISTICS

$p_{uo}$	50 mbar - 1.000 mbar
PS	3 bar
AMBIENT TEMPERATURE	-15°C to +60°C
HOUSING MATERIAL	aluminium die cast
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
CONNECTIONS	Rp 3/4", Rp 1" or NPT



## VERSIONS

NOMINAL SIZE	DESCRIPTION	OUTLET PRESSURE RANGE [mbar]
Rp 3/4"	Standard	50 - 150
	Standard	110 - 190
	Standard	150 - 450
	Standard	400 - 1.000
Rp 1"	Standard	50 - 150
	Standard	110 - 190
	Standard	150 - 450
	Standard	400 - 1.000

## OPTIONS

- Black epoxy coating
- Acceptance test certificate (ATC) to EN 10204/3.1
- Biogas or coke oven gas version ( $p_u$  max.: 1 bar, set pressure max.: 450 mbar,  $H_2S$  max 0,1%)
- NPT threads
- Hydrogen version

For more standard options, see page 62.

## INFO

Questions about the SL 5?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/SL5](https://products.medenus.de/SL5)



# SL 10 | SAFETY RELIEF VALVE

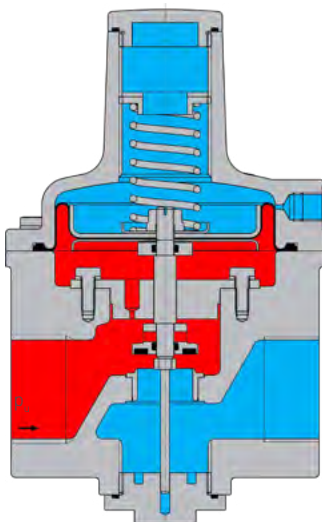


## DESIGN AND FUNCTION

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.



## CHARACTERISTICS

$p_{uo}$	25 mbar - 3.500 mbar
PS	8 bar
Rp 1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp 1 1/2"; Rp 2": $Q_{max}$	300 Nm <sup>3</sup> /h
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (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 1½"	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

## OPTIONS

- Suitable for oxygen (oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- Vent valve (BV) for breather connection<sup>1</sup>
- Leakage gas indicator
  - Typ LI-1 (Corner version)
    - with reed contact
    - without reed contact
  - Typ LI-2 (Straight version)
    - with reed contact
    - without reed contact
- "Gonzo-Nose" (insect protection for outdoor installation)
- Helium leak test for hydrogen applications
- NPT thread upon request

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications



## INFO

Questions about the SL 10?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/SL10](https://products.medenus.de/SL10)



# SL 20 | SAFETY RELIEF VALVE

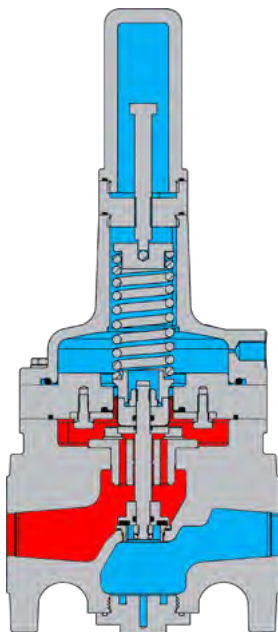


## DESIGN AND FUNCTION

The SL 20 spring-loaded safety relief valve is used to reduce pressure surges occurring briefly upstream of gas consumption systems or to prevent an impermissibly high pressure rise in the event of creeping gas quantities occurring, to protect downstream plant components from excessive pressure.

The safety relief valve consists of the actuator housing and the functional unit „control unit“. When closed, the gas flows into the actuator housing in the direction of the arrow. The pressure to be monitored is fed to the underside of the main diaphragm of the safety relief valve via the internal measuring line connection. This compares the actual value with the reference variable specified by the force of the setpoint spring. The setpoint required in each case is adjusted via the adjustment screw. When the setpoint is exceeded, the measuring unit lifts the actuator and allows gas to flow out through the blow-off line. When the actual value falls below the setpoint, the measuring unit closes the actuator again automatically.

## CHARACTERISTICS



$p_{uo}$	25 mbar - 16.000 mbar
PS	16 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## SETPOINT SPRING CONTROL DEVICE

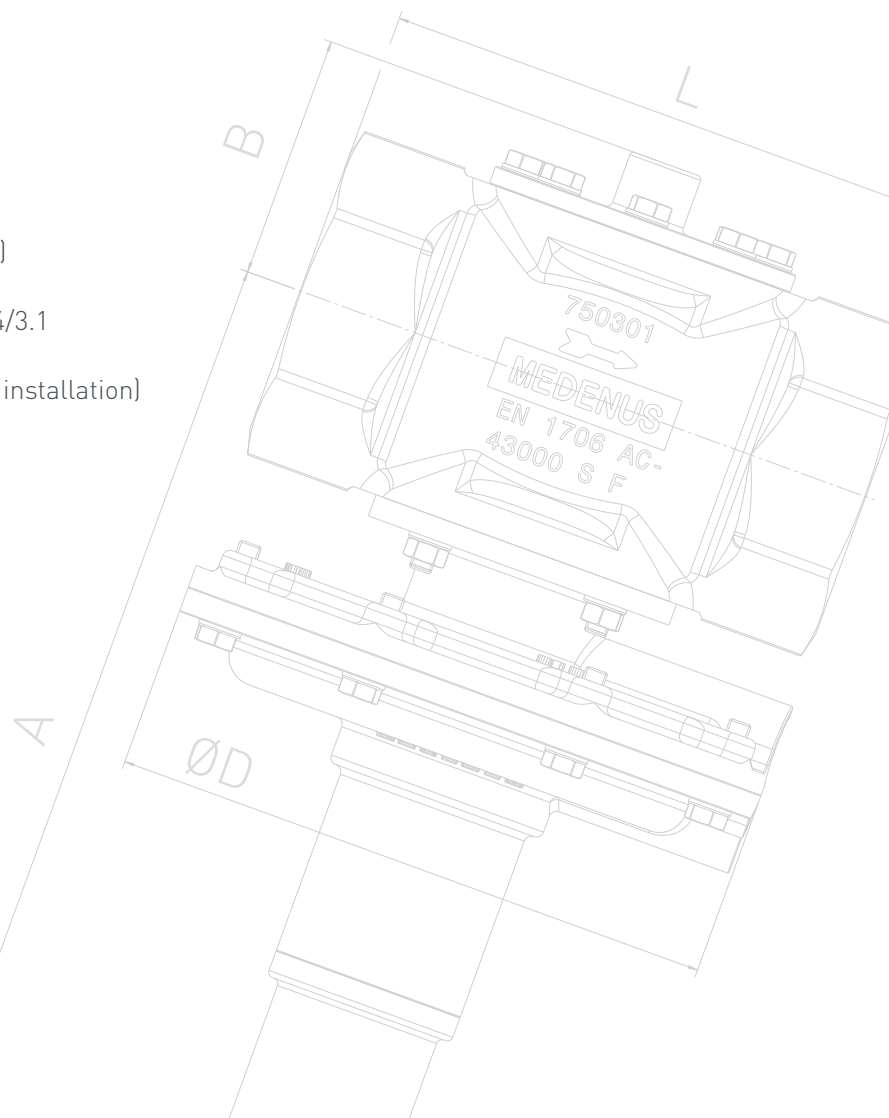
PRESSURE RANGE [mbar]	SPRING DATA	
	Spring- No.	Colour [RAL]
1.600 - 3.900	FG103	3020
3.500 - 7.610	FG104	5010
6.350 - 13.800	FG105	6010
12.600 - 16.000	FG106	7035

### OPTIONS

- Suitable for oxygen (< 10 bar; oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- Vent valve (BV) for breather connection<sup>1</sup>
- "Gonzo-Nose" (insect protection for outdoor installation)
- Helium leak test for hydrogen applications

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications



## INFO

Questions about the SL 20?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/SL20](https://products.medenus.de/SL20)

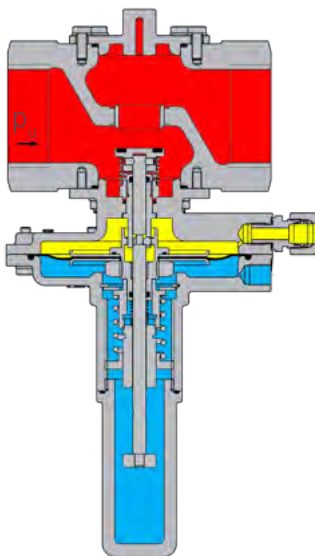


# S 50 | SAFETY SHUT-OFF VALVE



## 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 rod, 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 ( $\Delta p$ ).



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 3 bar
$p_{dso}$	20 - 3.000 mbar
$p_{dsu}$	5 - 2.050 mbar
PS	5 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
Rp 1": $Q_{max}$	100 Nm <sup>3</sup> /h
Rp 1 1/2"; Rp 2": $Q_{max}$	300 Nm <sup>3</sup> /h
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.



## VERSIONS

NOMINAL SIZE	DESCRIPTION
DN 25	S 50 with double sided Rp 1"
DN 40	S 50 with double sided Rp 1 1/2"
DN 50	S 50 with double sided Rp 2"

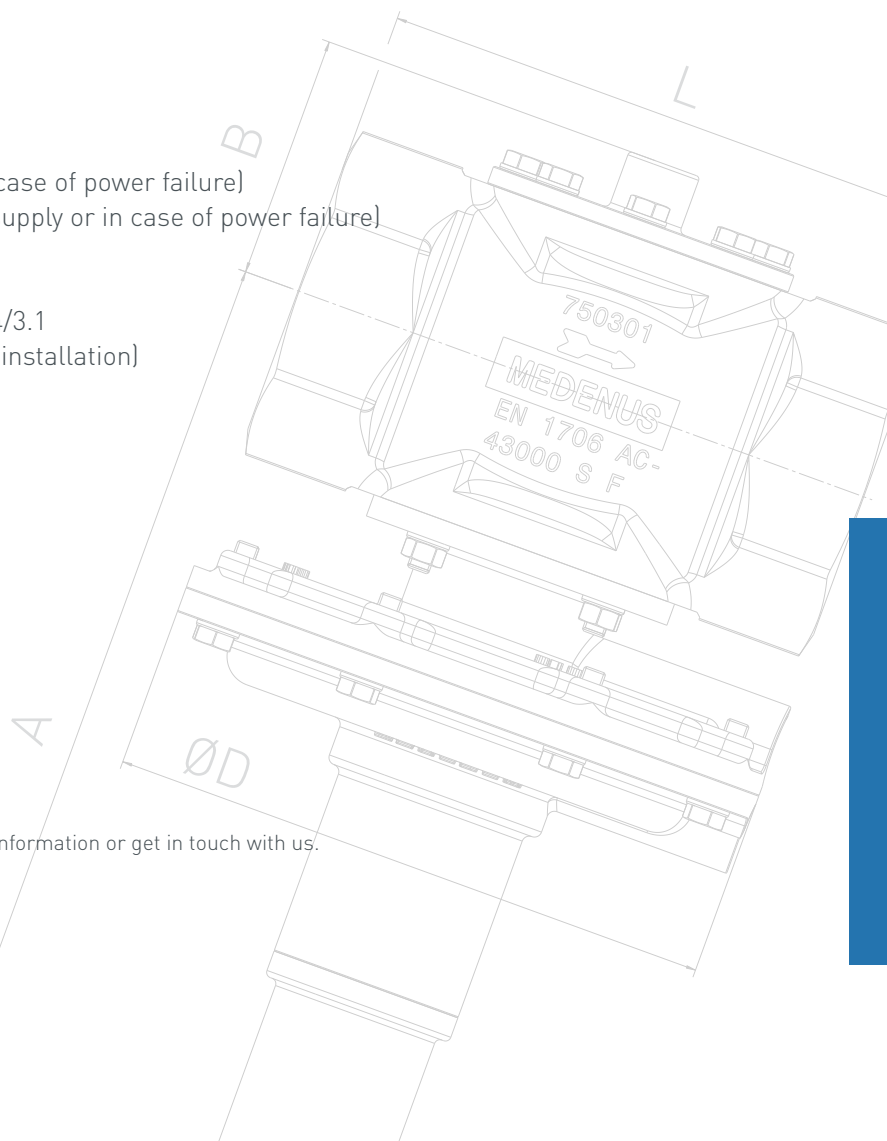
## OPTIONS

- Vent valve (BV) for breather connection<sup>1</sup>
- SSV position indicator
  - Inductive or 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 (oil-grease free)
- Coating with epoxy resin in RAL colours
- Acceptance test certificate (ATC) to EN 10204/3.1
- "Gonzo-Nose" (insect protection for outdoor installation)
- Helium leak test for hydrogen applications
- NPT thread upon request
- Low-pressure SSV<sup>2</sup>

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.



## INFO

Questions about the S 50?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/S50](https://products.medenus.de/S50)



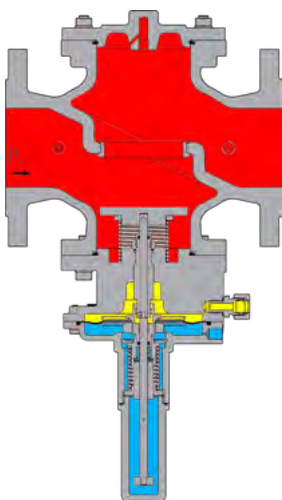
# S 100 | SAFETY SHUT-OFF VALVE



## 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 rod, 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 ( $\Delta p$ ).



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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <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

## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 8 bar
$p_{dso}$	50 - 8.000 mbar
$p_{dsu}$	10 - 300 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## 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

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- Vent valve (BV) for breather connection<sup>1</sup>
- 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
- "Gonzo-Nose" (insect protection for outdoor installation)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications
- High-pressure SSV (pdso > 3.500 mbar)
- Low-pressure SSV<sup>2</sup>

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.

## INFO

Questions about the S 100?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/S100](https://www.products.medenus.de/S100)



# S 104 | SAFETY SHUT-OFF VALVE



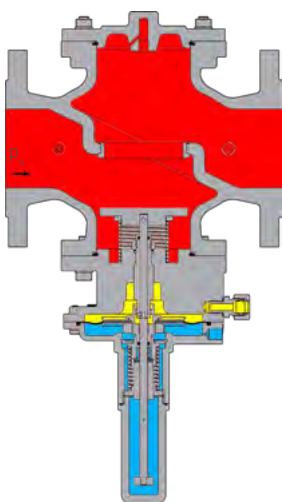
## DESIGN AND FUNCTION

The S 104 Safety Shut Off valve is mainly used to avoid any damage to components as well as to avoid too high or too low pressure in the gas train. This could cause high financial losses and/or injured people.

The safety shut off valve S 104 is suitable for gases in accordance with DVGW Code of Practice G260/262 and all other neutral and non-corrosive gases (others upon request). The S 104 is available with flange connections DN25 to DN200 and working pressure up to 16 bar. All safety shut off valves are certified by DVGW and CE.

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

NOMINAL SIZE	VALVE DIAMETER [mm]	K <sub>G</sub> -VALUE [m <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



## CHARACTERISTICS

INLET PRESSURE $p_u$	max. 16 bar
$p_{dso}$	35 - 16.000 mbar
$p_{dsu}$	5 - 2.050 mbar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	Aluminium sand cast
APPROVAL	According to PED
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16 or ASME B 16.5-Class 150RF



## VERSIONS

NOMINAL SIZE	DESCRIPTION
DN 25	S 104 Safety shut-off valve
DN 40	S 104 Safety shut-off valve
DN 50	S 104 Safety shut-off valve
DN 65	S 104 Safety shut-off valve
DN 80	S 104 Safety shut-off valve
DN 100	S 104 Safety shut-off valve
DN 125	S 104 Safety shut-off valve
DN 150	S 104 Safety shut-off valve
DN 200	S 104 Safety shut-off valve

\* Please note that we changed the DIN flange standard for DN 200 from PN 10 to PN 16 with September 2018.

## OPTIONS

- Vent valve (BV) for breather connection<sup>1</sup>
- 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
- "Gonzo-Nose" (insect protection for outdoor installation)
- Assembly kit (threaded rods, washers, nuts)
- Helium leak test for hydrogen applications
- High-pressure SSV (pdso > 3.500 mbar)
- Low-pressure SSV<sup>2</sup>

For more standard options, see page 62.

<sup>1</sup> Not suitable for hydrogen applications

<sup>2</sup> For the range of application, please refer to the product information or get in touch with us.

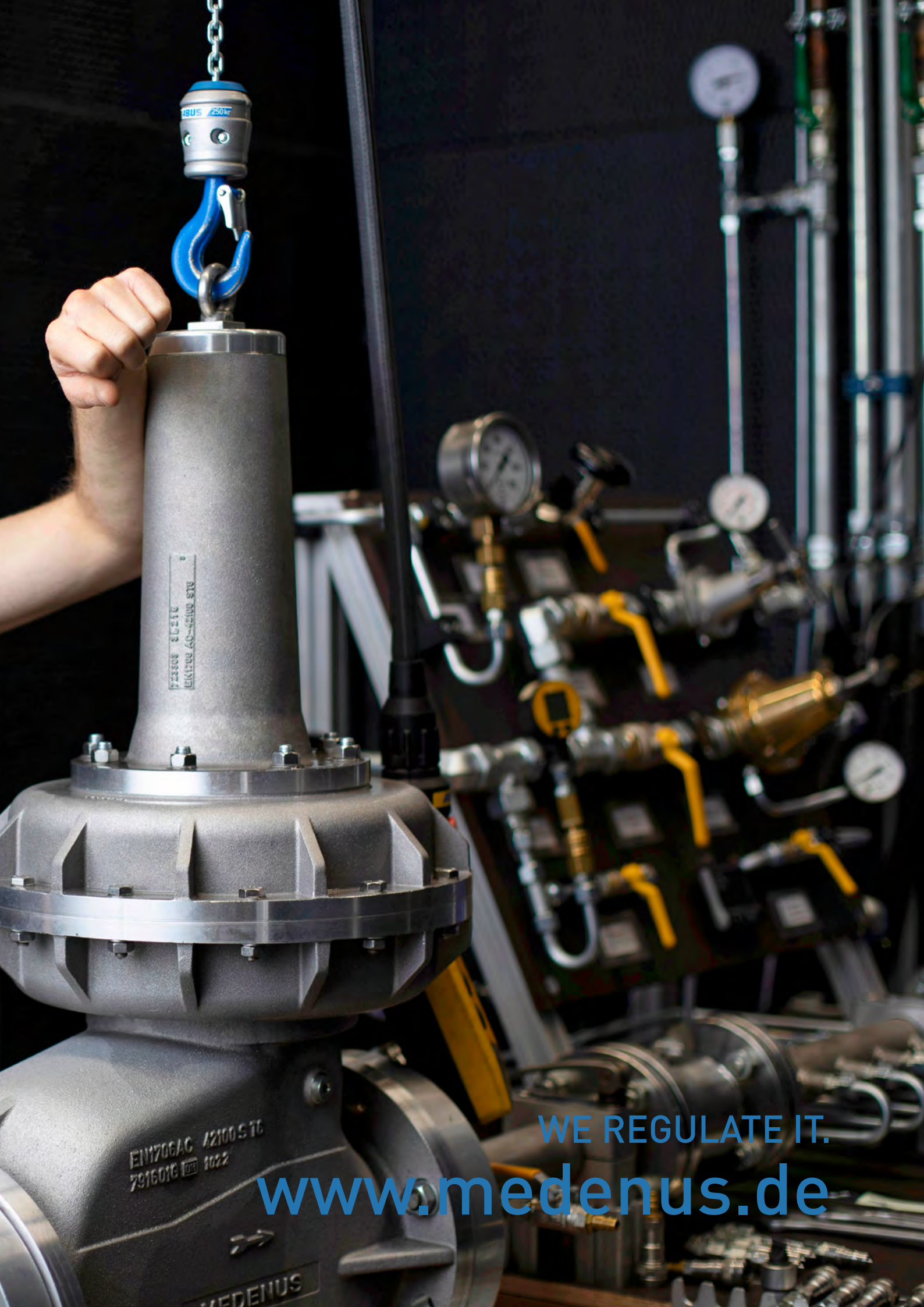
## INFO

Questions about the S 104?

Get in touch with us by email [info@medenus.de](mailto:info@medenus.de) or have a look at our webpage [products.medenus.de/S104](https://products.medenus.de/S104)







EN1700 AC-4200 ST6  
7916016 1022

MEDENUS

WE REGULATE IT.

[www.medenus.de](http://www.medenus.de)

# ACCESSOIRES

DESCRIPTION	
Drilling winch set (including drill winch, nut, connecting square and extension) for easy adjustment of the setpoint value	
Suction nut for mounting ball cage	
Breathing valve (BV) for the breathing connection of the safety shut - off or the safety relief valve	
Throttle valve (RSD2) for the measuring line of the control unit. The throttle valve can be used to optimize the control behavior of the controller in case of need	
<ul style="list-style-type: none"> <li>· Inductive sensor for safety shut-off valve with cap</li> <li>· Reed contact for safety shut-off valve with cap</li> </ul>	
Helium leak test (eg for hydrogen applications)	
<ul style="list-style-type: none"> <li>· R 50 / S 50 / SL 10</li> <li>· DN 25 - DN 100</li> <li>· DN 125 - DN 200</li> </ul>	
Additional or subsequent type plate	
Inspection test certificate 3.2 / Individual inspection	
Inspection test certificate 3.1 with material verification list	
Leakage gas indicator	
<ul style="list-style-type: none"> <li>· Type LI-1 (corner version)</li> <li>· with reed contact</li> <li>· without reed contact</li> <li>· Type LI-2 (straight version)</li> <li>· with reed contact</li> <li>· without reed contact</li> </ul>	
Fine filter (FF) for pilot controller	
"Gonzo-Nose" (insect protection for outdoor installation or safety diaphragm)	
Device identification with plastic label (others upon request)	
Special markings (e.g. barcodes) on request	
Lubricant (Synthesa Proba 270) 50 g	
Other accessories such as flange gaskets, spare parts*	

\*] For product-specific spare parts kits please use our spare parts catalogue (on request) and / or our factory number search on our website [medenus.de/fabrication-number-search](http://medenus.de/fabrication-number-search)



# MEDENUS - WORKING FOR YOU SINCE 1972

f.l.t.r.: Dipl. Ing. Bernd Häner, Inge and Dieter Medenus, Alexander Christiani, Dr. Ludger Ohm

The company founders Mrs. Inge and Mr. Dieter Medenus together with MEDENUS Managing Director Alexander Christiani with the owners of the company Dipl. Ing. Bernd Häner and Dr. Ludger Ohm.

## MEDENUS PLUS

### 10 REASONS IN FAVOUR OF GOOD BUSINESS RELATIONSHIP

1. High levels of expertise and high quality standards developed over decades
2. Wide range of reliable, well proven regulators
3. Customised designs as well as special constructions possible
4. Modern, fast and efficient production system
5. Guaranteed delivery dates
6. Quick response times
7. Large quantities of modules and spare parts on stock
8. Theoretical and practical training sessions can be provided to suit your needs
9. Optimised spare parts inventories due to the modular design of our whole product range
10. 100% Made in Germany

# TRADING GOODS

To provide even better service and to save your time and money we also offer some other products of German manufacturers as trading products.



## FLANGED BALL VALVES

### 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
- Inspection certificate 3.1 (ATC)
- Oxygen versions
- Locking device

### VERSIONS

#### PN 16

DN 25    DN 32    DN 40    DN 50    DN 65    DN 80    DN 100    DN 125    DN 150

### VERSIONS

#### PN 16 WITH TWO-PART HOUSING WITH INTERMEDIATE FLANGE

DN 125    DN 150    DN 200    DN 250

### CHARACTERISTICS

PS	16 bar
AMBIENT TEMPERATURE	-20 °C to +60 °C
HOUSING MATERIAL	spheroidal graphite iron
CORROSION PROTECTION	primer
GAS SPECIFICATION	gas families 1, 2, 3, 5 (DVGW - G 260) and non-aggressive gases. Other gases on request.
FLANGE STANDARD	DIN 1092 - PN 16

# SERVICE AND TRAINING

## ON-SITE SERVICE

Service Engineer hourly rate	€ 104.—
Surcharge from first additional working hour up to 10 working hours maximum daily and no later than 8:00 p.m.	+25%
additional charge for more than 10 hours daily and/or after 8:00 p.m.	+50%
Surcharge for public holidays, Sundays and on December 24th and December 31st	+125%

A working hour includes the travel time for arrival and departure to the customer or to the construction site, the documentation and any resulting additional times required or caused by the customer (e.g. waiting time for requested operators, set-up times, etc.)

## DAILY EXPENSES:

Each day of attendance is calculated from a travel time of 4 hours a rate of € 40,- per day.

## ACCOMMODATION COSTS:

Any accommodation costs incurred shall be payable by the customer as follows:

- Per night (or after receipt): € 75.—

## TRAVEL EXPENSES/ MILEAGE ALLOWANCE:

Service vehicle:

0,95 € / km

To determine the kilometres to be charged, the place of departure of the Service Engineer shall be used. Round trip will be charged. The upper calculation limit for the number of km shall be 1000 km maximum.

## FIXED PRICES:

For clearly defined scopes of services, we can offer you fixed prices. Please contact our sales department.

## REPAIR

We will be glad to assess returned devices as to whether repair is still worthwhile.

This will incur the following fees:

- Cost estimate for repair: € 104.—  
(This fee does not apply if repair or a new device is ordered)
- Scrapping fee per device:
- For small devices (threaded versions): € 60.—
- For flanged versions: € 104.—

Any returns will incur the relevant freight and packing costs.

## TRAINING COURSES

We offer you internal standard seminars as well as customer-specific on-site training. Just take a look at our webpage or get in touch with us.



**MEDENUS**  
Gas Pressure Regulation

WERBUNG H