MEDENUS

Gas Pressure Regulation

Gas pressure regulator

RSP 254 / RSP 255

Regulator

R 70-10 / R 70-20 / R 70-100

Actuator

AS 254 / AS 255

Product information

EN

Table of Contents

List of abbreviations and formula symbols

AC	Accuracy class
AG_o	Upper response pressure group
AG_u	Lower response pressure group
BV	Breather valve
HDS	High-pressure screw spindle
K_G	value
p_d	Outlet pressure
p_{ds}	Setpoint of the outlet pressure
p_{dso}	Upper SSV response pressure
p_{dsu}	Lower SSV response pressure
PS	Maximum allowable pressure
p_u	Inlet pressure
ρ_n	Standard gas density
P_{dF}	Pneumatic follow-up setpoint from I/P converter
P_{d100}	Outlet pressure R70-100
P_{d20}	Outlet pressure R70-20
P_{d20s}	Outlet pressure R70-10 with 1:2 pressure converter for follow-up setpoint adjustment
P_{d10s}	Outlet pressure R70-10 with 1:1 follow-up setpoint adjustment
P_{d10}	Outlet pressure R70-10
Q_n	Standard volumetric flow rate
RSD	Throttle valve
SSV	Safety shut-off valve
SD	Setting device
SG	Closing pressure group
At	Actuator
t_{ugas}	Gas inlet temperature
VS	Valve seat
w_u	Inlet gas velocity
w_d	Outlet gas velocity
W_{dso}	Upper adjustment range (SSV)
W_{dsu}	Lower adjustment range (SSV)
Δp_{wo}	Min. re-engagement difference between upper response pressure and normal operating pressure
Δp_{wu}	Min. re-engagement difference between lower response pressure and normal operating pressure
MOP	Maximum operating pressure in a system
MOP_d	Maximum operating pressure upstream of the system
FF	micro filter

Application, Characteristics, Technical Data

Application

Gas pressure regulator (GDR), indirect-acting (operating with auxiliary power), for systems acc. to DVGW - work sheet G 491 (A) and G 600 (A) (TRGI)

Can be used as an equipment component on gas consumption facilities as defined in EC Directive EU/2016/426 (GAR)
Can be used for the gases defined in DVGW - work sheet G 260 / G 262 and neutral non-aggressive gases.
(other gases on request)

Characteristics

- Regulator with double-diaphragm system
- Model according to DIN EN 334 / 14382
- Integral pressure-tight model (IS)
- Gas pressure regulator with or without integrated SSV
- Compact and maintenance-friendly modular design
- SSV functional class, optionally A or B to DIN EN 14382
- Open-air model

Type of model (option)

- Optionally with micro filter FF upstream of the regulator
- Optionally with pneumatic follow-up setpoint from I/P converter
- With built-in noise reduction
- With SSV manual release
- With SSV electromagnetic remote release when power is applied or in case of power failure
- With electric position indicator SSV 'Closed' via inductive proximity initiator or via Reed contact
- With BV breather valve (for SSV release in case of diaphragm breakage)
- Coating with epoxy resin in RAL colours
- Special model such as Wobbe correction for burner control

$$Ws = \frac{Hs}{\sqrt{d}}$$

$$Ws - \sqrt{P} = \frac{Hs}{\sqrt{d}} - \sqrt{P} = constant$$

P = burner pressure

Technical Data

Gas pressure regulator	RSP 254 / RSP 255 (with integrated SSV) RP 254 / RP 255 (without integrated SSV)
Actuator model	AS 254 / AS 255 (with integrated SSV) A 254 / A 255 (without integrated SSV)
Safety shut-off valve (SSV)	with MD control device (W_{dsu} 8 mbar - 50 mbar ; W_{dso} 50 mbar - 400 mbar) With MD-R control device (W_{dsu} 30 mbar - 200 mbar ; W_{dso} 300 mbar - 4,000 mbar) With K 70-10 control device indirect-acting (W_{dso} 2,000 mbar - 12,500mbar)
Regulator models	R 70-10, R 70-20, R 70-20 (1:2), R 70-100
Required pressure difference for pilot regulator	500 mbar
Model	Integral pressure-tight (IS)
Max. allowable pressure PS	16 bar
Max. inlet pressure $p_{u,max}$	16 bar
Nominal widths	RSP 254: DN 25, DN 50, DN 80, DN 100, DN 150, DN 200 RSP 255: DN 50, DN 80, DN 100
Actuator flange connection	DIN EN 1092 - flanges PN 16 ASME - B16.5 - flanges Class 150 RF
Pipe connection type	G 1/4" or G 3/8" for threaded pipe connections to DIN EN ISO 8434-1 (DIN 2353)
Actuator material	Al cast alloy
Regulator material	Al wrought alloy
Temperature range (Operating/ambient temperature)	-20 °C to +60 °C to DIN EN 334/ 14382
Function, Strength and Tightness	DIN EN 334 / 14382
Corrosivity category*	DIN EN ISO 12944-2
Ex protection	The mechanical components of the device do not have any ignition sources of their own and are thus not covered by the scope of ATEX (2014/34/EU). Electrical components used at the device fulfil the ATEX requirements.

*) Categories C1 to C5-I are guaranteed without additional coatings.
For category C5-M, an epoxy resin coating is recommended.

Application, Characteristics, Technical Data

Design and function of the gas pressure regulator (GPR)

The gas pressure regulators RSP 254/255 have the function of keeping the outlet pressure of a gas train downstream of a gas pressure regulator largely 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, and no gas whatsoever will flow out of the system into the surrounding atmosphere in standard operation. The regulator consists of the regulating unit, optionally connected upstream to a micro 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 a 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 gas train.
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 set 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 taken at the inlet flows as auxiliary energy through the nozzle/baffle plate system and the bypass valve into the outlet pressure chamber, generating, depending on the position of the nozzle/baffle plate system, the setting pressure for the valve opening position required in each case against the bypass valve. The auxiliary energy gas then flows back to the outlet pressure network via the bypass valve.
In case of zero tap of the gas train, 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, for example, 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.

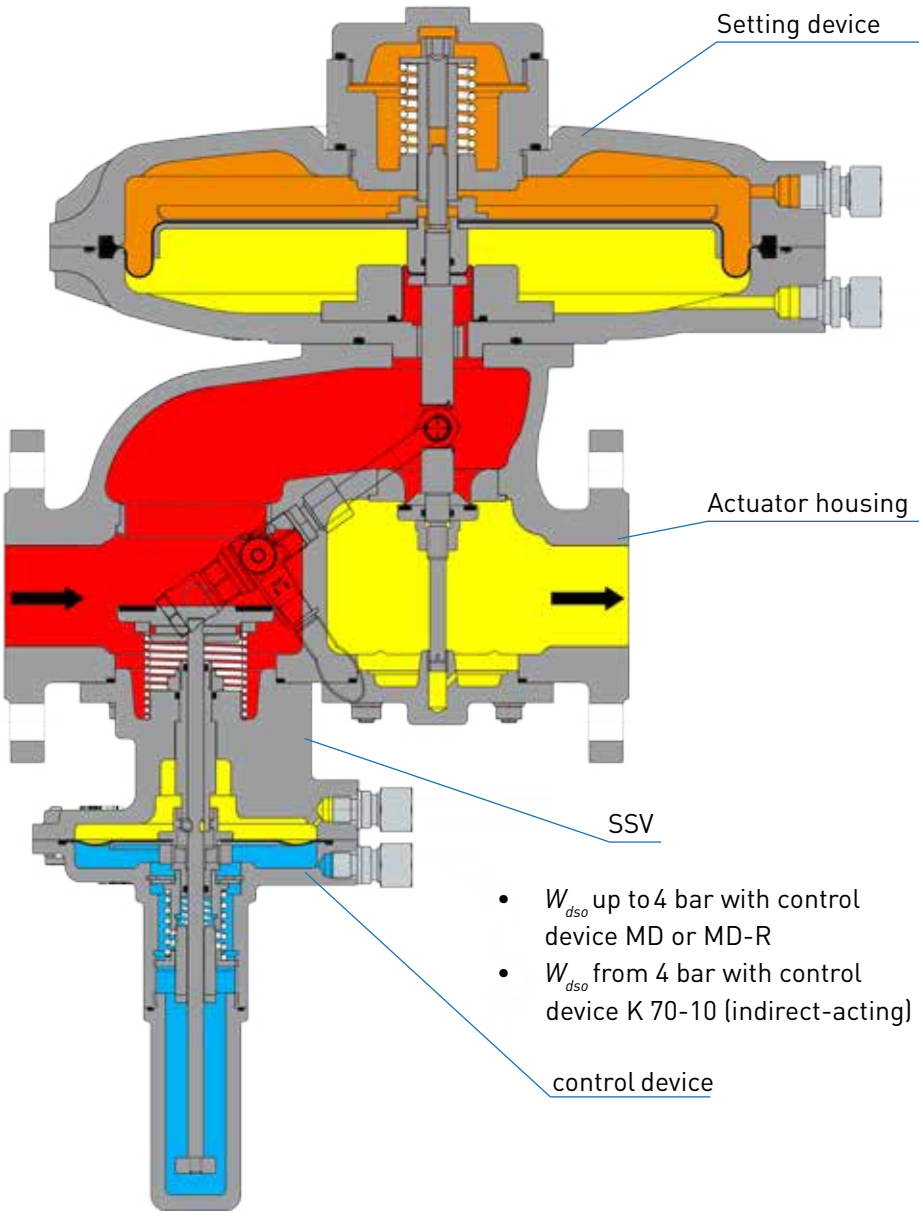
Design and function of the safety shut-off valve (SSV) direct-acting

In case of inadmissible overpressure or lack of gas in the gas train, 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 on to the SSV control device via a separate measurement line. As a function of the change in pressure, the SSV diaphragm in the control device is raised or lowered. When the outlet pressure in the gas train 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 screw spindle, and the closing spring will press the SSV valve plate 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 (Δp). The SSV can, except where otherwise stipulated in national legislation, be used either in function class A (with diaphragm rupture protection) or B (without diaphragm rupture protection).
There is also the option of using a remote display for the SSV position 'CLOSED' and a manual and remote release when power is applied or in case of power failure.

Design and function of the safety shut-off valve (SSV) indirect-acting

At a safeguarding pressure of the gas train of greater than 4 bar, the SSV must be combined with a control device K70-10. In this case, the SSV switching device is designed as function class B and set to a switching pressure of approx. 500 mbar. The control device K70-10 connected upstream of the switching device is set to the upper safeguarding pressure. As soon as the pressure of the gas train reaches the upper safeguarding pressure, the control device will open and allow the gas pressure to flow to the measurement connection of the SSV switching device. Here a pressure of more than 500 mbar will build up, causing the switching device to release as described above. The excess pressure in the measurement line will be let down by flowing into the breather line via the bypass throttle and safely released into the atmosphere.

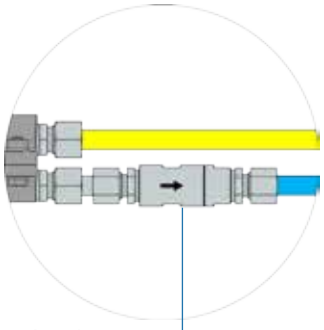
Sectional view
Actuator AS 255

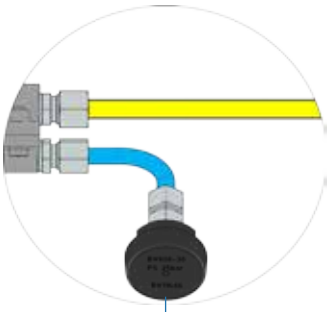


- W_{dso} up to 4 bar with control device MD or MD-R
- W_{dso} from 4 bar with control device K 70-10 (indirect-acting)

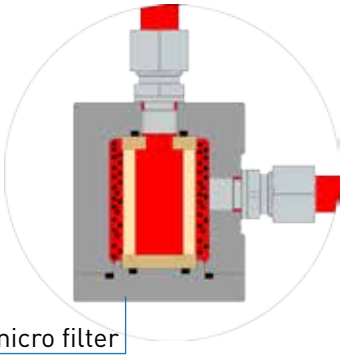
Inlet pressure
Outlet pressure
Setting pressure
Atmosphere

SSV connection options

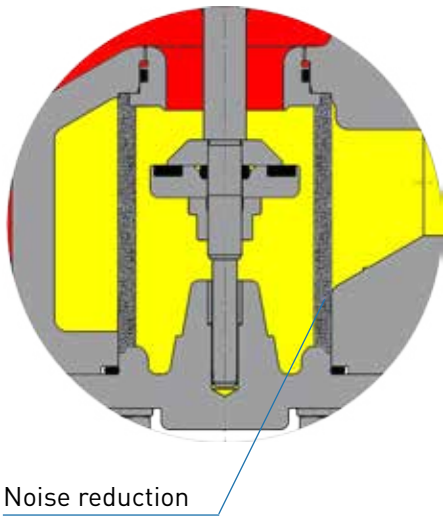




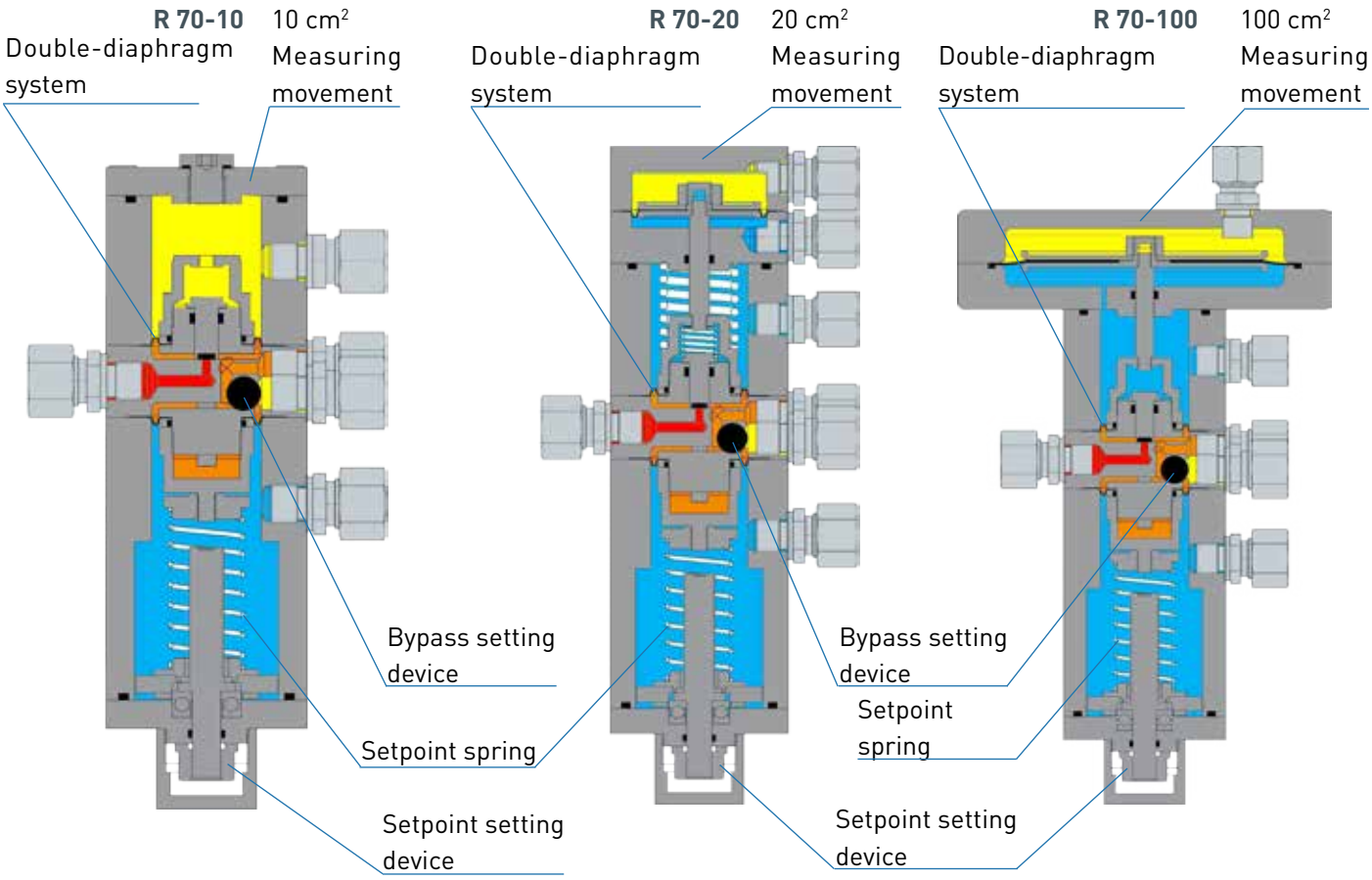
FF micro filter for R70



Option: Noise reduction



Sectional view
Regulators R 70-10, R 70-20, R 70-100 and SSV control device K 70-10

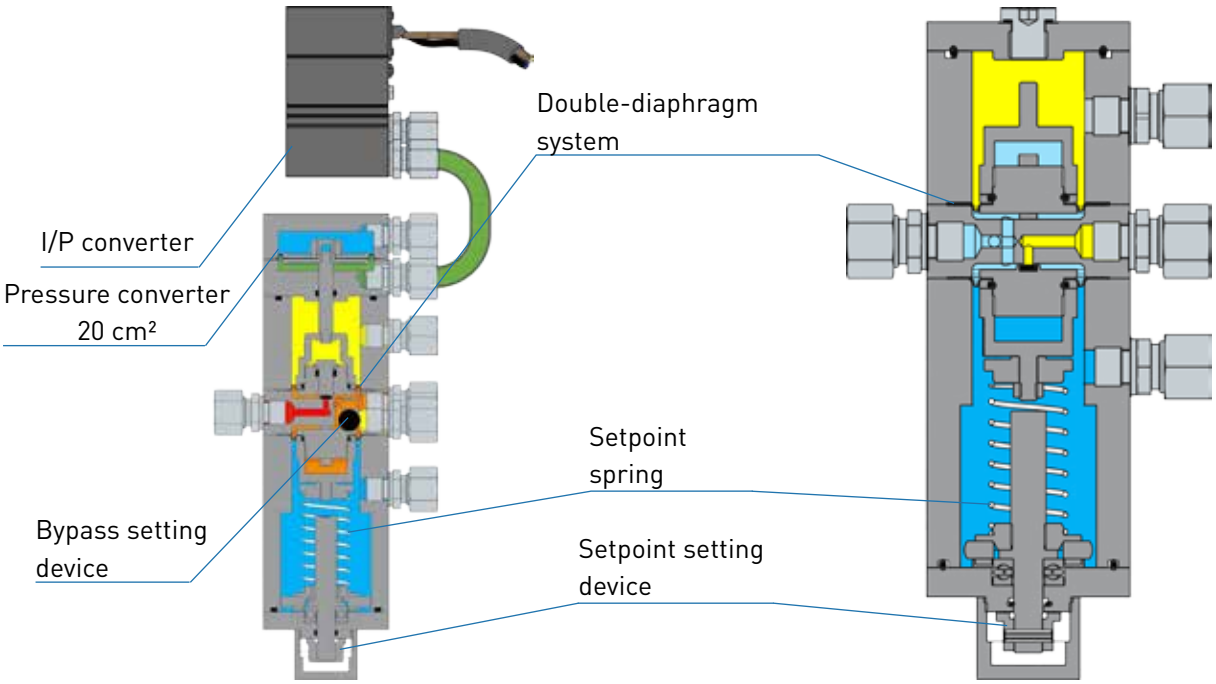


R 70-20

with pneumatic 1:2 pressure converter for follow-up setpoint adjustment, for example, via I/P converter

K 70-10

SSV control device



Application, Characteristics, Technical Data

K_G* value

	Setting device								
	AS 254						AS 255		
Nominal width	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
Setting device Ø / Valve seat Ø	320	320	390	390	385	385	390	385	385
17.5 mm	200	220							
27.5 mm	420	500	550	600			550		
32.5 mm		750	850	900			750		
42.5 mm			1,450	1,500	1,600		1,250	1,500	1,500
52.5 mm				1,800	2,000		1,700	1,800	1,850
65.0 mm					3,500			2,600	3,200
85.0 mm					4,600			3,500	4,300
95.0 mm					5,800	6,100			4,800
115.0 mm						8,950			

Setting device is approved for a max. pressure differential of 0.5 bar

Accuracy class AC / Closing pressure group SG

	Ø Setting device		
Outlet pressure range p_d	R70-10	R70-20	R70-100
10 mbar to 20 mbar			10 / 50
20 mbar to 50 mbar			5 / 20
50 mbar to 500 mbar	5 / 10	5 / 10	5 / 10
0.5 bar to 2.5 bar	2.5 / 10	2.5 / 10	
2.5 bar to 5 bar	1 / 10	1 / 10	
> 5 bar	1 / 5	1 / 5	

($\Delta p_{u,max} \pm 2bar$)

Response pressure group AG (SSV direct-acting)

Upper response pressure group AG	
30 mbar to 100 mbar	AG 10
100 mbar to 500 mbar	AG 5
> 500mbar	AG 2.5
Lower response pressure AG	
5 mbar to 30 mbar	AG 20
30 mbar to 50 mbar	AG 10
> 50mbar	AG 5

Response pressure group AG (SSV indirect-acting) control device K 70-10**

Upper response pressure group AG	
800 mbar to 4,000 mbar	AG 2.5
> 4,000 mbar	AG 2,5

*) KG value for natural gas: d = 0.64 (ρ_n = 0.83 kg/m³), t_{ugas} = 15 °C

**) Optionally, the control device K70-10 can be used as SBV.

SSV setpoint spring table - Control device direct-acting

Type	Upper response pressure		Lower response pressure		Spring data	
	w_{dso} [mbar]	Δp_{wo} [mbar]	w_{dsu} [mbar]	Δp_{wu} [mbar]	Spring no.	Colour [RAL]
MD small ball lock			2 - 8	15	FE 900	1028
			8 - 18	15	FE 901	2002
			18 - 30	20	FE 902	6010
			22 - 35	30	FE 903	5015
			31 - 45	30	FE 904	9005
			45 - 60	40	FE 905	9010
			60 - 85	50	FE 906	4002
AS 254: DN 25 - 100	40 - 80	20			FD 911	2002
	65 - 120	30			FD 912	6010
	100 - 170	30			FD 913	5015
AS 255: DN 50 - 80	140 - 240	40			FD 914	9005
	200 - 370	60			FD 915	9010
	360 - 510	80			FD 916	3020
	490 - 710	80			FD 917	5010
	630 - 1080	100			FD 918	9006
	980 - 1500	200			FD 919	4002
MD-R small ball lock			35 - 52	30	FE 900	1028
			50 - 80	40	FE 901	2002
			75 - 110	50	FE 902	6010
			90 - 130	80	FE 903	5015
			115 - 160	80	FE 904	9005
			160 - 210	100	FE 905	9010
			220 - 290	100	FE 906	4002
AS 254: DN 25 - 100	100 - 135	30			FD 910	1028
	130 - 265	40			FD 911	2002
	210 - 380	60			FD 912	6010
	320 - 530	80			FD 913	5015
AS 255: DN 50 - 80	440 - 730	80			FD 914	9005
	600 - 1130	100			FD 915	9010
	1050 - 1500	200			FD 916	3020
	1450 - 2100	200			FD 917	5010
	1850 - 3500	200			FD 918	9006
	2800 - 4000	200			FD 919	4002

SSV setpoint spring table - Control device direct-acting

Type	Upper response pressure		Lower response pressure		Spring data	
	w_{dso} [mbar]	Δp_{wo} [mbar]	w_{dsu} [mbar]	Δp_{wu} [mbar]	Spring no.	Colour [RAL]
MD large ball lock AS 254: DN 150 - 200 RSP 255: DN 100			10 - 40	15	FM 400	1028
			35 - 115	30	FM 402	6010
			60 - 245	60	FM 404	9005
	40 - 180	20			FL 412	6010
	70 - 340	50			FL 413	5015
	330 - 1100	80			FL 415	9010
MD-R large ball lock AS 254: DN 150 - 200 RSP 255: DN 100			10 - 180	50	FM 400	1028
			155 - 380	100	FM 402	6010
			200 - 950	150	FM 404	9005
	145 - 670	100			FL 412	6010
	270 - 1230	200			FL 413	5015
	1200 - 4500	200			FL 415	9010

Determining the upper response pressure

Output pressure P_d	Upper response pressure W_{dso} *
≤200 mbar	P_d +100 mbar
>200 mbar to ≤800 mbar	P_d x 1.5
>800 mbar to ≤1600 mbar	P_d x 1.3
> 1600mbar	P_d +500 mbar

Regulator setpoint spring table

R70-100	R70-20		R70-10		K70-10	Spring data	
P_{d100} [mbar]	P_{d20} [mbar]	P_{d20s} [mbar] (1:2)	P_{d10} [mbar]	P_{d10s} [mbar] (1:1)	P_d [mbar]	Spring no.	Colour [RAL]
0-37	0-180	$P_{d20s}=P_{d10}+Ph*2$		$P_{d10s}=P_{d10}+P_h$		FD 911	2002
30-85	150-400		300-850			FD 912	6010
55-160	250-750		550-1600			FD 913	5015
100-260	550-1250		1000-2600			FD 914	9005
200-460	1000-2250		2000-4600		2000-4600	FD 915	9010
400-620	2000-3000		4000-6200		4000-6200	FD 917	5010
	3000-6500		6000-13000		6000-13000	FD 918	9006

P_h Pneumatic follow-up setpoint from I/P converter (0-6 bar)
P_{d100} Outlet pressure R70-100
P_{d20} Outlet pressure R70-20
P_{d20s} Outlet pressure R70-10 with follow-up setpoint 1:2
P_{d10} Outlet pressure R70-10
P_{d10s} Outlet pressure R70-10 with follow-up setpoint 1:1
P_d Outlet pressure K70-10

*) The upper response pressure is rounded up to full tens, for example 251 mbar-> 260 mbar

Dimensions, Connection and Weight

AS 254: Connection of the functional line and breather line

Nominal width	Setting device Setting pressure line / Return line	SSV control device direct-acting SSV measurement line	 Breather line
DN 025	Connection* for: Tube 12 x 1.5 (thread G 3/8)	Connection* for: tube 12 x 1.5 (thread G 1/4)	
DN 050			
DN 080			
DN 100			
DN 150		Connection* for: tube 12 x 1.5 (thread G 3/8)	
DN 200			

AS 255: Connection of the functional line and breather lines

Nominal width	Setting device Setting pressure line / Return line	SSV control device direct-acting SSV measurement line	 Breather line
DN 050	Connection* for: Tube 12 x 1.5 (thread G 3/8)	Connection* for: tube 12 x 1.5 (thread G 1/4)	
DN 080			
DN 100		Connection* for: tube 12 x 1.5 (thread G 3/8)	

R 70: Connection of the functional line and breather lines

	Function / Breather line
R 70-10	Connection* for: Tube 12 x 1.5 (thread G 1/4)
R 70-20 (1:2)	
R 70-100	

K 70: Connection of the functional line and breather lines

	Function / Breather line
K 70-10	Connection* for: Tube 12 x 1.5 (thread G 1/4)

Note: Observe the following documents in relation to installation, start-up and maintenance:
DVGW - work sheets G 491 and G 600
Operating and Maintenance Instructions RSP 254 / 255

The gas pressure regulators RSP 254 / 255 shall be installed in the pipeline preferably in horizontal position. For all nominal widths, the direction of flow is indicated by an arrow on the housing.

*) Threaded pipe connections to DIN EN ISO 8434-1 (DIN 2353)

Design

Calculation of the required K_G value

$p_d / p_u > 0.5$	$p_d / p_u \leq 0.5$
K_G value at	K_G value at
a sub-critical pressure ratio	a super-critical pressure ratio
$K_G = Q_n / \sqrt{p_d \cdot (p_u - p_d)}$	$K_G = 2 \bullet Q_n / p_u$

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 (page 10)

Note: For the device design, a capacity reserve of 10% is recommended.

Example:

$p_{u\ min}$ 5.0 bar	/	$p_{u\ max}$ 8.0 bar
$p_{d\ min}$ 0.3 bar	/	$p_{d\ max}$ 0.5 bar
$Q_{n\ min}$ 800 m³/h	/	$Q_{n\ max}$ 1500 m³/h

1.5 bar / 6 bar = 0.25 < 0.5

→ Supercritical pressure ratio

$K_G = 2 \bullet 1500 / 6 = 500$ ((m³/h)/bar)

AS 254 DN 50 VS 32.5

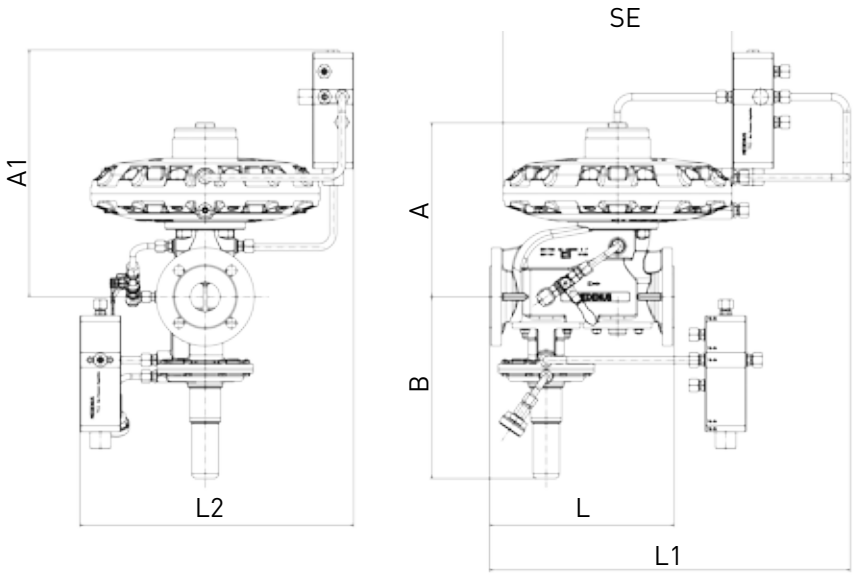
K_G value: 750 (m³/h)/bar

Dimensions, Connection and Weight

Dimensional drawing of gas pressure regulator

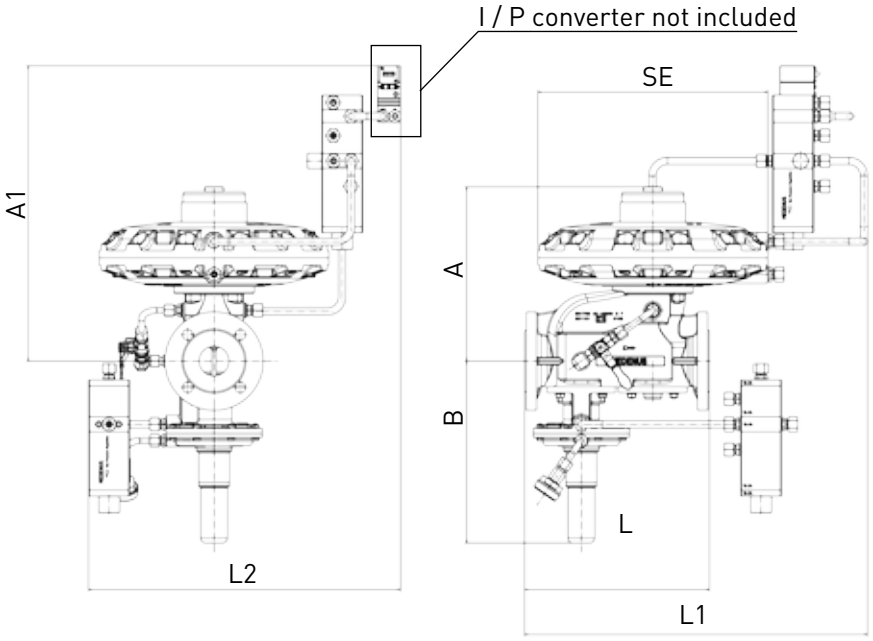
Gas pressure regulator
RSP 255 consisting of:

Actuator AS 255
Regulator R 70-10
Control device K 70-10



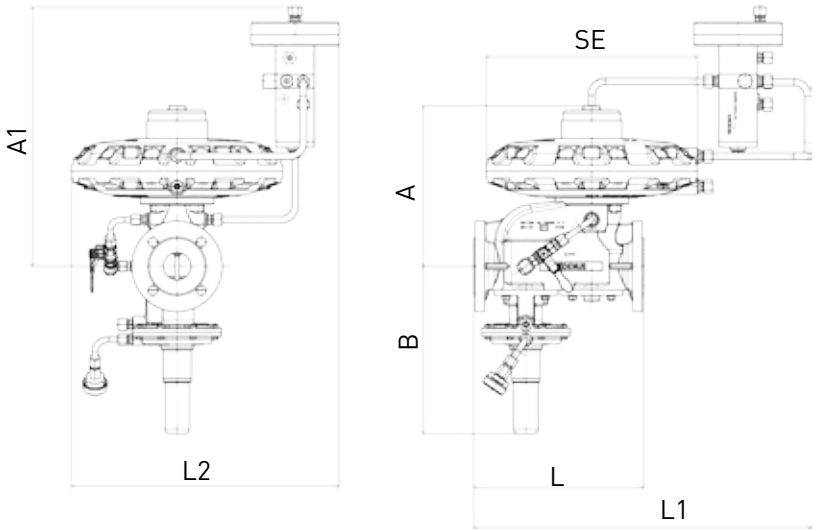
Gas pressure regulator
RSP 255 consisting of:

Actuator AS 255
Regulator R 70-20/2 with I/P converter
Control device K 70-10



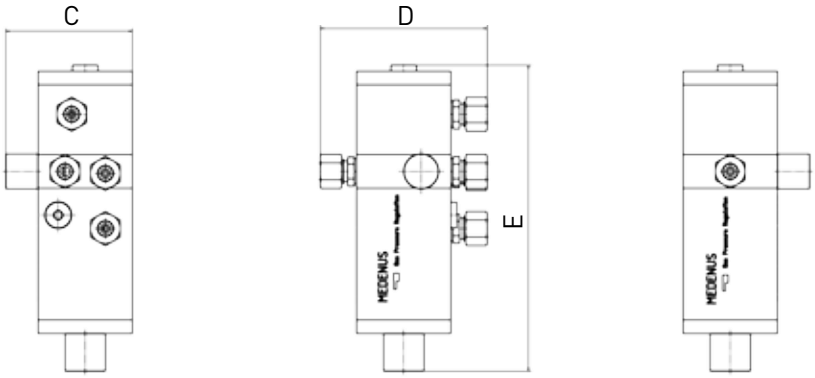
Gas pressure regulator
RSP 255 consisting of:

Actuator AS 255
Regulator R 70-100
Control device MD or MD-R



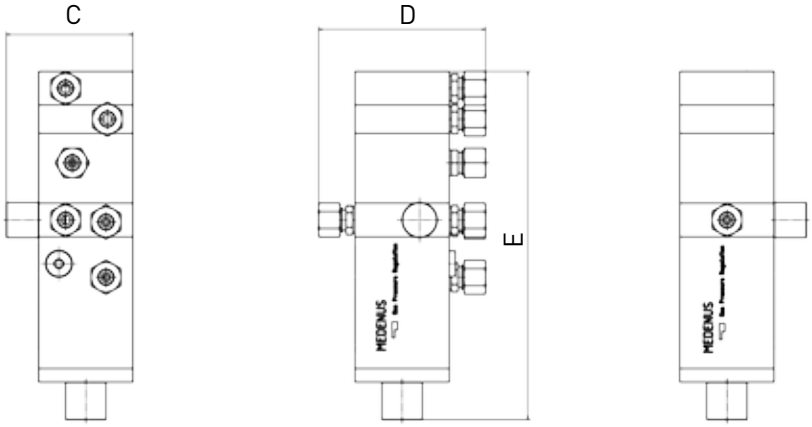
Dimensional drawing of regulator

Pressure range: 0.5 bar - 12 bar



R 70-10

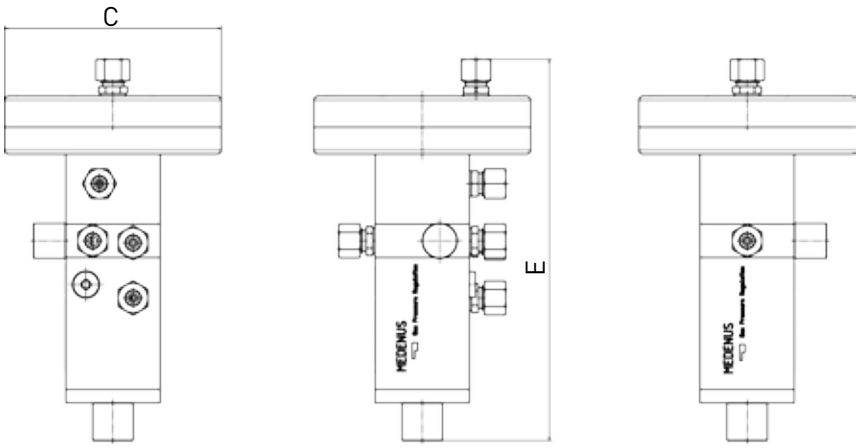
Pressure range: 0.1 bar - 6 bar



R 70-20

R 70-20/2 with follow setpoint adjustment (1:2)

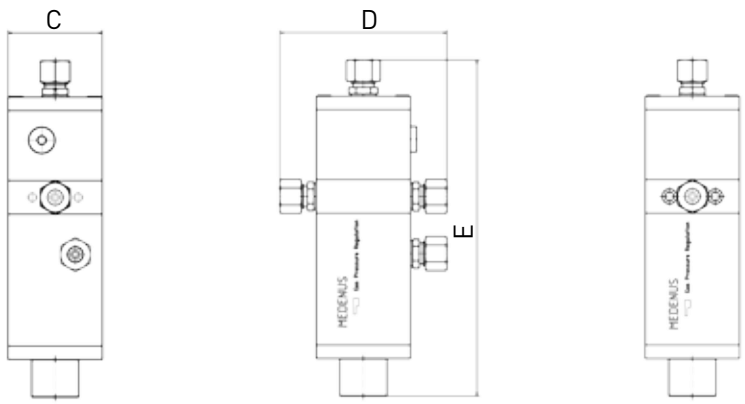
Pressure range: 10 mbar - 500 mbar



R 70-100

Dimensional drawing of control device

Pressure range: 2 bar - 12,5 bar



K 70-10

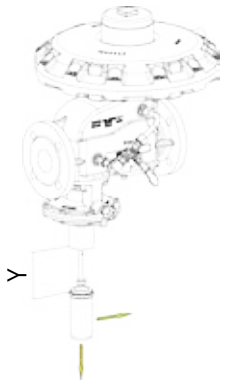
Dimensions and weight

Gas pressure regulator		RSP 254						RSP 255		
Nominal width / Dimensions		DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 50	DN 80	DN 100
A [mm]	RE 320	214	232	-	-	-	-	-	-	-
	RE 385/390	-	-	293	308	370	510	292	370	441
A1* [mm]	R 70-10 / R 70-20 / R 70-100	345	365	423	438	500	640	422	500	571
B [mm]		270	282	305	315	386	400	305	311	386
L [mm]		230	230	310	350	480	600	310	410	480
L1* [mm]		500	500	585	616	598	800	586	660	710
L2* [mm]	R 70-10 / R 70-20 / R 70-100	480	480	502	514	462	570	501	520	542
Y [mm]		100	100	100	100	150	150	100	150	150
Weight [kg]	RE 320	13.5	15	-	-	-	-	22	-	-
	RE 385/390	-	-	28	29	58	88	-	42	58
Actuator connection		DIN EN 1092 - PN16								
		ASME B 16.5 - Class 150								

Regulator	R 70-10	R 70-20	R 70-100
C [mm]	94	94	Ø161
D [mm]	124	124	124
E [mm]	227.5	259	283.5
Weight [kg]	3.7	4.2	5.3
Regulator connection	G 1/4		

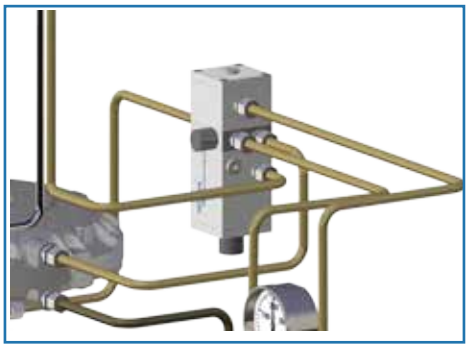
Control device	K 70-10
C [mm]	70
D [mm]	124
E [mm]	250
Weight [kg]	3.7
Control device connection	G 1/4

Reactivation of SSV

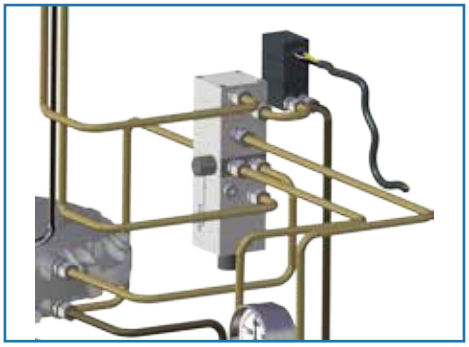


*) The dimensions given are „max.“ and depending on the control device and piping!

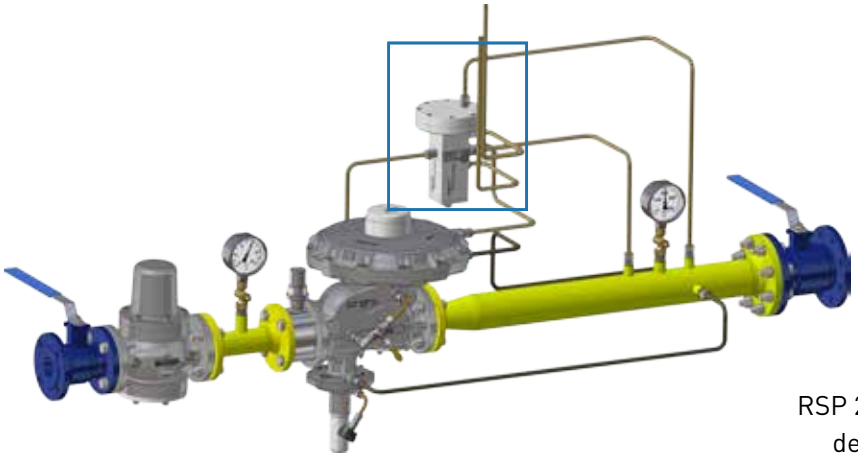
Installation situations

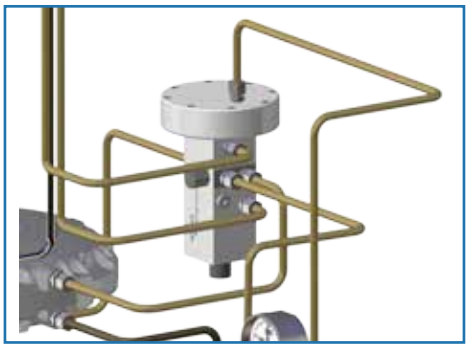


RSP 255 shown with actuator AS 255
incl. switching device MD or MD-R,
Regulator R 70-10 and control device K 70-10



RSP 255 shown with actuator AS 255 incl. switching
device MD or MD-R, regulator R 70-20/2,
I/P converter and control device K 70-10





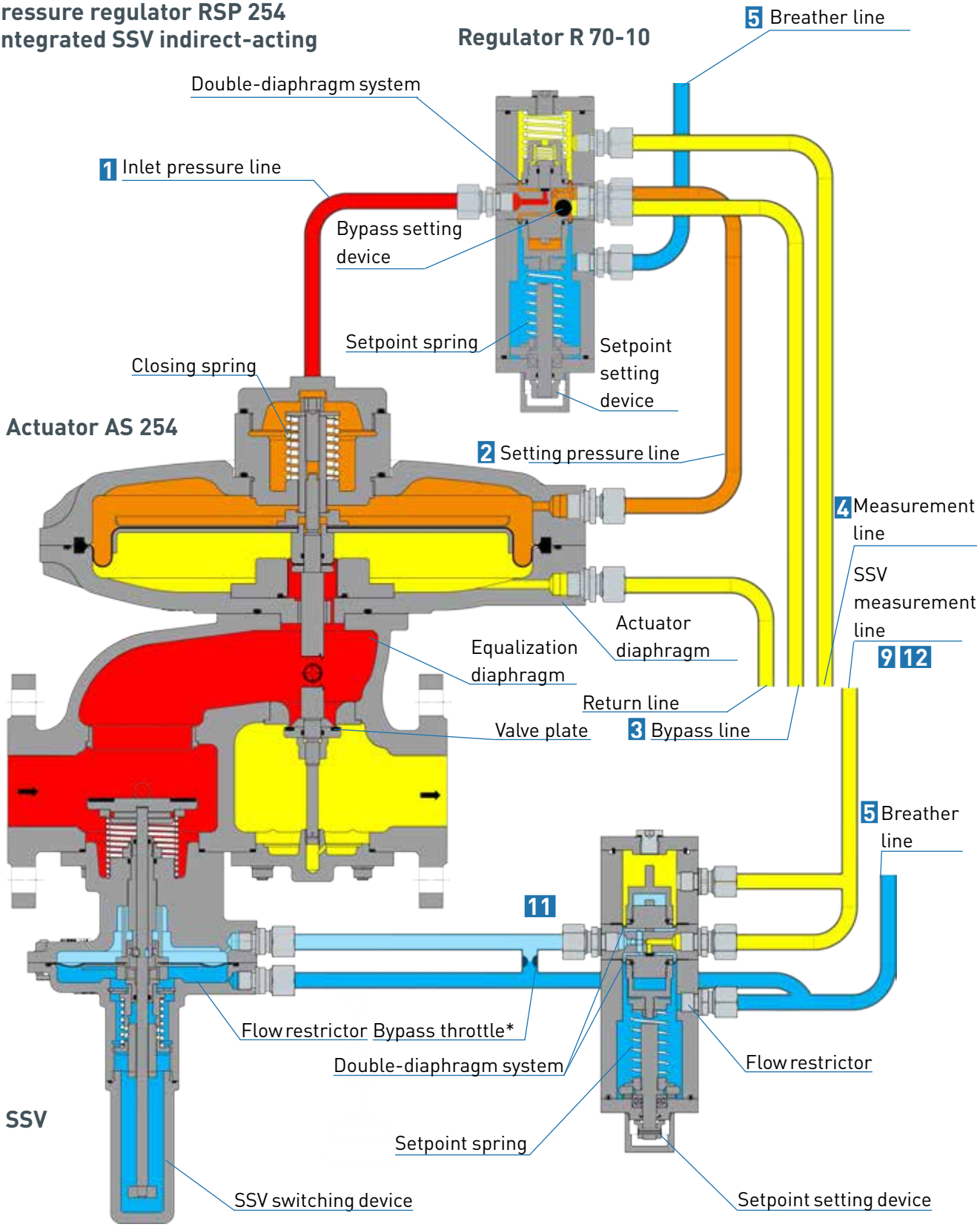
RSP 255 shown with actuator AS 255 incl. control
device MD or MD-R and regulator R 70-100

Connection R70 / K70

Connection no.	R70-10	R70-20	R70-100	K70-10
1	Inlet pressure line	Inlet pressure line	Inlet pressure line	
2	Setting pressure line	Setting pressure line	Setting pressure line	
3	Bypass line	Bypass line	Bypass line	
4	Measurement line	Measurement line	Breather line	
5	Breather line	Breather line		Breather line
6			Measurement line	
7		Pneumatic follow-up setpoint		
8		Breather line		
9				SSV measurement line
10				
11				SSV switching pressure
12				SSV measurement line

Connection example

Gas pressure regulator RSP 254 with integrated SSV indirect-acting

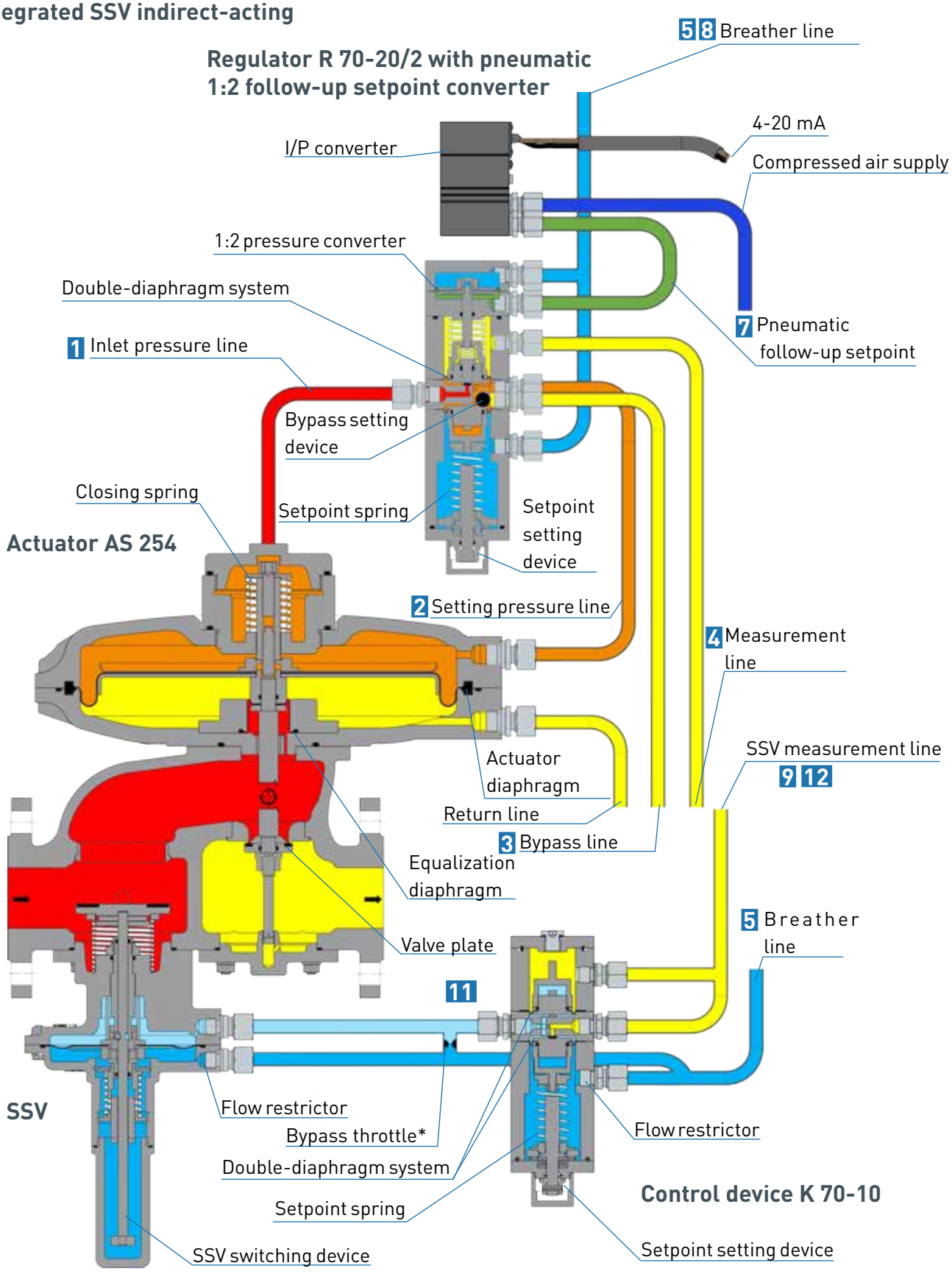


*) permanently installed bypass valve (baffle plate) Ø 1mm

W_{dso} greater than 4 bar with **control device K 70-10**

Inlet pressure
Outlet pressure
Set pressure
Atmosphere
SSV switching pressure

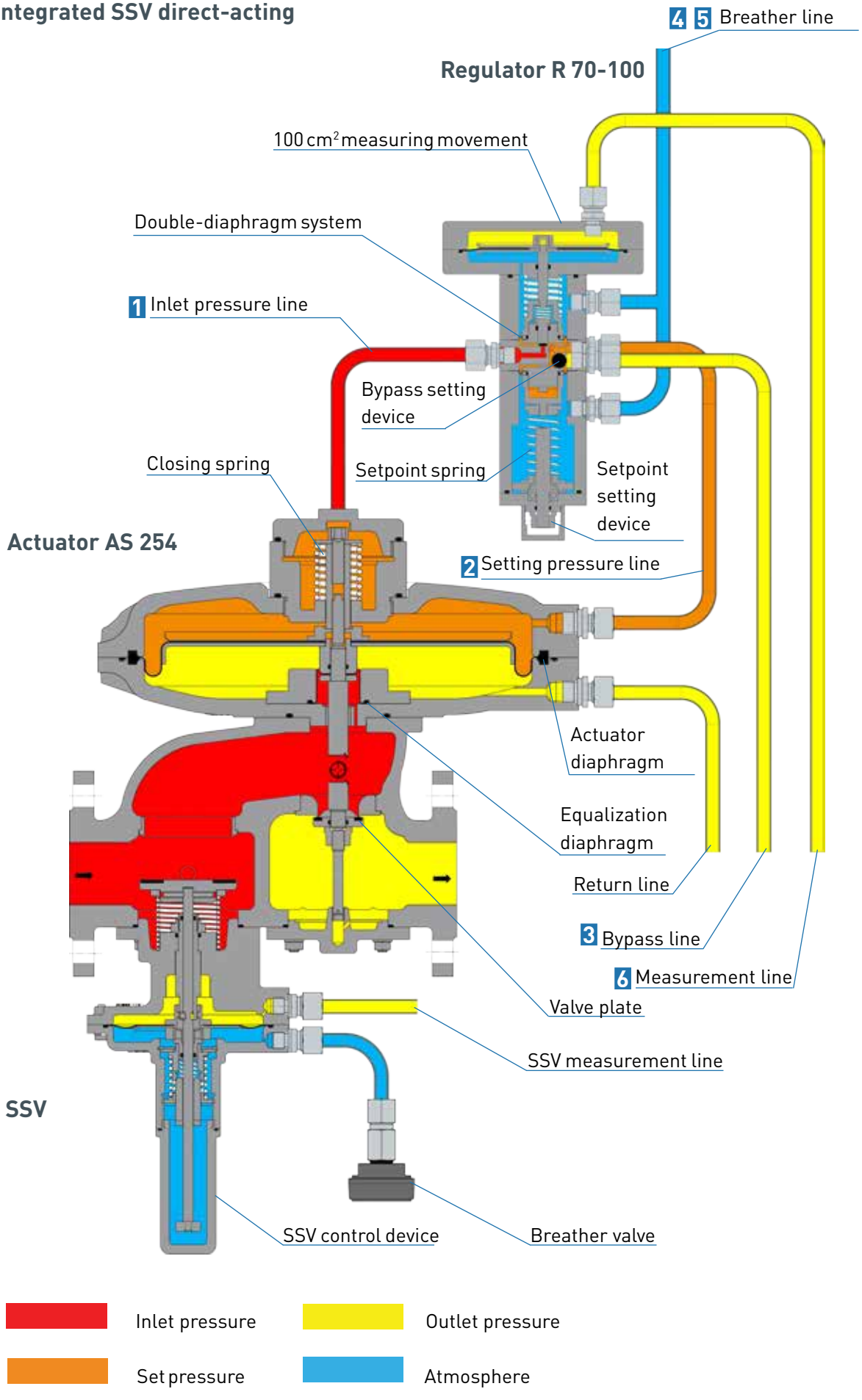
Gas pressure regulator RSP 254 with integrated SSV indirect-acting



*) permanently installed bypass valve (baffle plate) Ø 1mm

Inlet pressure
Outlet pressure
Follow-up setpoint
Setting pressure
Atmosphere
SSV switching pressure

Gas pressure regulator RSP 254 with integrated SSV direct-acting



Order data

Example:

Actuator with gas pressure regulator: RSP 254/050/390/32,5/MD-R/left/SR/BV/N/H/R 70-10/WAZ/So

Order code:	RSP 254	050	-	MD-R	-	left	SR	BV	N	H	R 70-10	WAZ	So
Order selection	**Designation**													
Type														
RSP 254 (with integrated SSV)	RSP 254	RSP 254												
RSP 255 (with integrated SSV)	RSP 255													
RP 254 (without integrated SSV)	RP 254													
RP 255 (without integrated SSV)	RP 255													
DN - Nominal width	Table p. 22		050											
Flange model														
PN 16	-			-										
Class 150	C													
SSV														
with control device MD	MD													
with control device MD-R	MD-R				MD-R									
with control device K 70-10 indirect-acting	K 70-10													
SSV functional class														
A incl. diaphragm rupture protection	-					-								
B	B													
Direction of flow														
Right (from left to right)	-													
Left (from right to left)	left						left							
Noise reduction														
without noise reduction	-													
with noise reduction	SR							SR						
SSV valve accessories														
without SSV valve accessories	-													
Switching valve	RSS													
Breather valve	BV								BV					
Electrical position indicator, SSV 'Closed'														
without electrical position indicator	-													
with ... , via proximity switch	N									N				
with ... , via Reed contact	R													
SSV release														
without release	-													
with manual release	H										H			
with electromagnetic remote release, when power is supplied	SG													
with electromagnetic remote release, in case of power failure	SA													
Regulator														
R 70-10 (0,5 bar bis 12bar)	R 70-10											R 70-10		
R 70-20/2 (0,1 bar bis 6bar) + P_{dF} (1:2)	R 70-20/2													
R 70-100 (10 mbar - 500 mbar)	R 70-100													
without acceptance test certificate	-													
with acceptance test certificate	WAZ												WAZ	
Special model	So*													So

DN - Nominal width

Regulator type	025	050	080	100	150	200
RSP 254	X	X	X	X	X	X
RSP 255		X	X	X		

In each selection group, only one option can be selected in each case.

*) for example coating with epoxy resin in RAL colours

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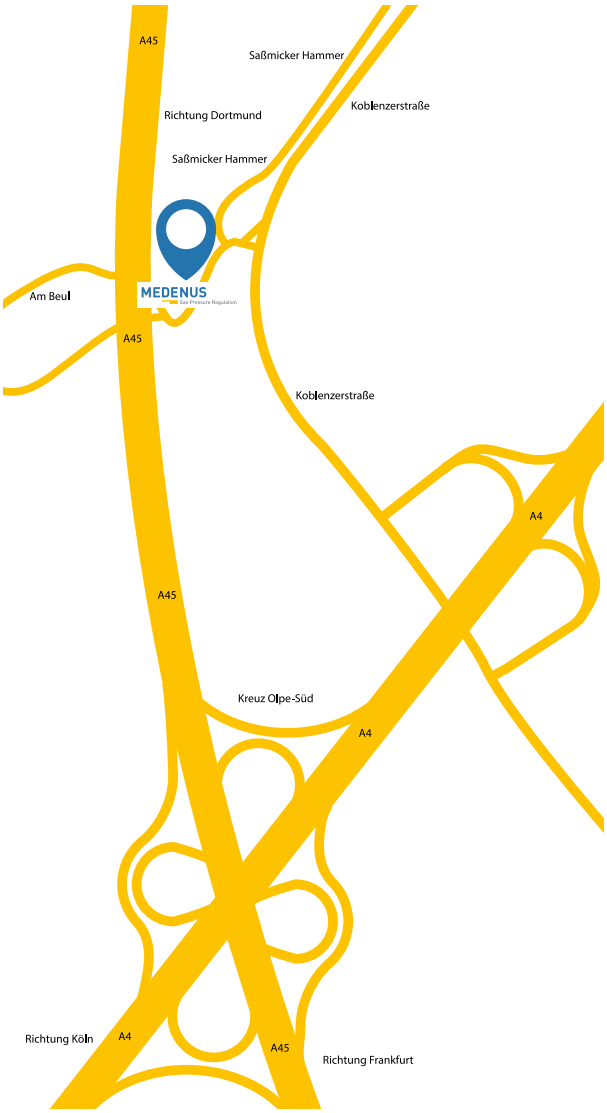

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