

# MEDENUS



Gas Pressure Regulation



## Safety Relief Valve SL 10

Product information



EN



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### ATTENTION

Observe the following publications in relation to installation, start-up and maintenance:  
 DVGW - work sheets G 491 and G 600  
 Operating and Maintenance Instructions SL 10

## List of abbreviations and formula symbols

AC	Accuracy class	$p_{ds\ o}$	Upper SSV response pressure	$W_{ds\ o}$	Upper spring adjustment range (SSV)
$AG_o$	Upper response pressure group	$p_{ds\ u}$	Lower SSV response pressure	$W_{ds\ u}$	Lower spring adjustment range (SSV)
$AG_u$	Lower response pressure group	$p_{f,max}$	Maximum closing pressure	$\Delta p$	Pressure difference from inlet pressure to outlet pressure
BV	Breather valve	PS	Maximum allowable pressure	$\Delta p_{wo}$	Min. re-engagement difference between upper response pressure and normal operating pressure
GPR	Gas pressure regulator	$p_u$	Inlet pressure	$\Delta p_{wu}$	Min. re-engagement difference between lower response pressure and normal operating pressure
HDS	High-pressure spindle	$Q_n$	Standard volumetric flow rate	$\rho_n$	Gas density
$K_G$	Valve flow rate coefficient	RE	Diaphragm assembly		
$p$	Pressure	RSD2	Throttle valve		
$p_d$	Outlet pressure	SSV	Safety shut-off valve		
$p_{df}$	SRV closing pressure	SRV	Safety relief valve		
$p_{do}$	SRV opening pressure	SG	Closing pressure group		
$p_{ds}$	Setpoint of the response pressure	$t_{Gas}$	Gas inlet temperature		
		VS	Valve seat		
		$w_d$	Outlet gas velocity		
		$w_u$	Inlet gas velocity		

# Application, Characteristics, Technical Data

## Application

Safety relief valve (SRV), direct-acting (operating without auxiliary power), for systems acc. to DVGW work sheets G 491 (A) and G 600 (A) (TRGI)

Can be used as an equipment component on gas consumption facilities as defined in Regulation (EU) 2016/426.

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

- Integral pressure-tight version (IS)
- Class A
- Position-independent installation
- High level of response accuracy
- Open-air model

## Type of model / Options (see page 10)

- AV breather valve
- Oxygen model
- Hydrogen model
- Coating with epoxy resin in RAL colors

## Technical data

<b>Type</b>	SL 10
<b>Model</b>	Integral pressure-tight (IS)
<b>Max. allowable pressure PS</b>	8 bar
<b>Max. inlet pressure <math>p_{u,max}</math></b>	3.5 bar
<b>Nominal width</b>	Rp 1" (DN 25), Rp 1½" (DN 40), Rp 2" (DN 50) (NPT thread on request)
<b>Type of connection</b>	Internal thread acc. to EN 10226-1
<b>Material</b>	
Housing / actuator housing	Al - cast alloy
<b>Corrosivity category</b>	DIN EN ISO 12944-2
C1 to C5-I	without additional coatings
C5-M	an epoxy resin coating is recommended (see page10)
<b>Temperature range, Class 2</b> (operating/ambient temperature)	-20°C to +60°C
<b>Accuracy class AC</b>	5
<b>Closing pressure group SG</b>	10
<b>Function, strength and tightness</b>	DIN EN 33821
<b>CE mark acc. to PED/ PIN number</b>	CE-0085-AQ0879

## Ex protection

The mechanical parts of the device do not have any potential ignition sources of their own and therefore do not fall within the scope of ATEX 95 (94/9/EC). Electrical components fitted to the device comply with the ATEX requirements.

## Preferred installation position

The gas pressure regulators S10 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.



Installation upside down only after consultation with Medenus GmbH

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 SL 10

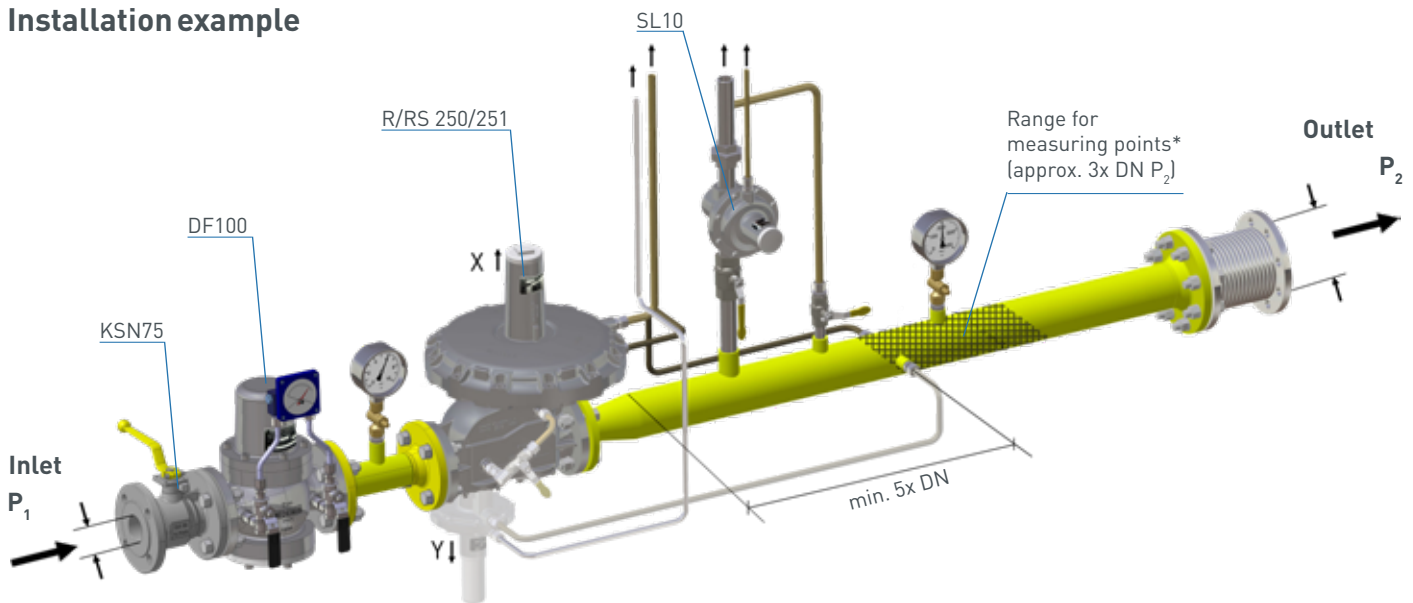
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## Structure and function

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, and is intended to protect downstream system components from excessive pressure levels.

The safety relief valve is composed of the actuator housing and the "control device" functional unit. In the closed position, the gas flows into 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 main diaphragm 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 unit will lift the actuator, allowing the gas to escape via the blow-off line. If the actual value falls below the setpoint, the measuring unit will close the actuator again automatically.

## Installation example



\*) Recommended max. velocity at the measurement line port 25 m/s



## Valve seat diameter, measuring unit diameter

Nominal width	Connection	Valve seat Ø (mm)	maximum flow rate K <sub>G</sub> -value [m <sup>3</sup> /(h*bar)]	Diaphragm assembly
DN 25	Rp 1	20	200	160
DN 40	Rp 1½	25	350	160
DN 50	Rp 2	25	430	160

## Diaphragm assembly setpoint spring table

Pressure range (mbar)	Spring data	
	Spring no.	Color [RAL]
20 - 39	FG100	9006
35 - 71	FG101	5015
55 - 131	FG102	6018
105 - 275	FG103	3020
215 - 575	FG104	5010
415 - 1050	FG105*	6010
900 - 1950	FG106**	7035
1750 - 3560	FG107**	1028

\*) with high-pressure spring plate (HD1)

\*\*\*) with high-pressure screw spindle (HD2)

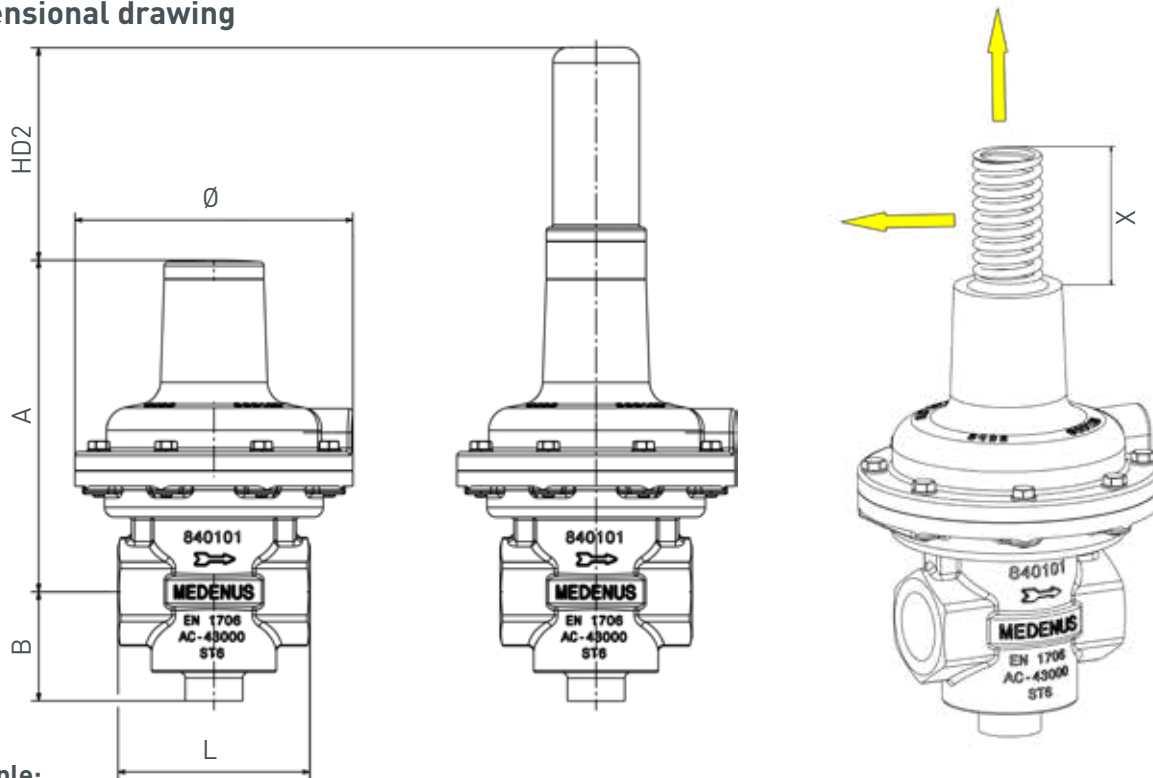


# Dimensions, Connection, and Weight

## Dimensions and weight

Nominal width DN	Connection	∅ (mm)	A (mm)	B (mm)	L (mm)	HD2 (mm)	X (mm)	Weight (kg)	Weight HD2 (kg)
25	Rp 1	145	173	57	100	112	180	2.5	0.4
40	Rp 1½	145	173	61	140	112	180	3.5	0.4
50	Rp 2	145	173	61	160	112	180	3.5	0.4

## Dimensional drawing



### Example:

SL10/Rp 1" with HD2

Weight (SRV + HD2): 2.5 kg + 0.4 kg = 2.9 kg

Dimensions (A + HD2): 173 mm + 112 mm = 285 mm

## Connections

Nominal width	Breather line
DN 25	Connection* for:
DN 40	Tube 10 x 1.5
DN 50	(thread G 1/4)

## Note

Observe the following publications in relation to installation, start-up, and maintenance:

DVGW - work sheets G 491 and G 600

Operating and Maintenance Instructions SL 10

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)

## Types of Models / Options

### AV breather valve

The AV breather valve is used to secure the installation room against inadmissible escape of gas from diaphragm comparator compartments of safety shut-off valves. In case of a defect, the impermissible escape of gas into the surrounding atmosphere is limited to a maximum of 30l/h (air).

It also serves as a substitute for an expensive and complex installation of breather lines.

**(Option not available for hydrogen version H<sub>2</sub>)**



AV breather valve

### Epoxy resin coating in RAL colors

To protect the safety relief valves from external influences, starting from a corrosivity category C5-M we recommend an epoxy resin coating.



### Types of models

Oxygen model O<sub>2</sub>

Hydrogen model H<sub>2</sub> (with helium leak test)

The Medenus gas pressure regulators are suitable for use with hydrogen as a medium up to a proportion of 100%. Further information can be found in the special edition (10/2019) of gwf Gas+Energie and on our homepage at ([www.medenus.de](http://www.medenus.de))







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