

Safety solenoid valve Nominal width Rp 1/2 - Rp 2

SV
SV-D
SV-DLE

DUNGS®

6.01



Technical Description

The Dungs safety solenoid valve SV is a single-stage automatic shut-off valve to EN 161 for gas burners and gas burning appliances:

- Double-disc valves
- Max. operating pressure up to 0.5 bar
- Standard IP 65
- zero current shutoff
- SV, SV-D: fast-open
- SV-DLE: slow-open with adjustable fast stroke for starting gas flow
- DC solenoid
- SV-... 505 - 520: closed position signal contact retrofittable
- Pipe thread on inlet side, threaded flange on outlet side
- Threaded flange on inlet side retrofittable
- High flow rates
- Free of non-ferrous metals, suitable for gases up to 0.1 vol. % H₂S, dry

Application

The solenoid valve is used for securing, limiting, shutting off and releasing the gas supply to gas burners and gas burning appliances.

The DUNGS SV-... safety solenoid valve is suitable for gases of gas families 1, 2, 3 and other inert gaseous media.

Approvals

EC type test approval as per EC Gas Appliance Directive:

SV-... CE-0085 BM0332

EC type test approval as per EC Pressure Equipment Directive:

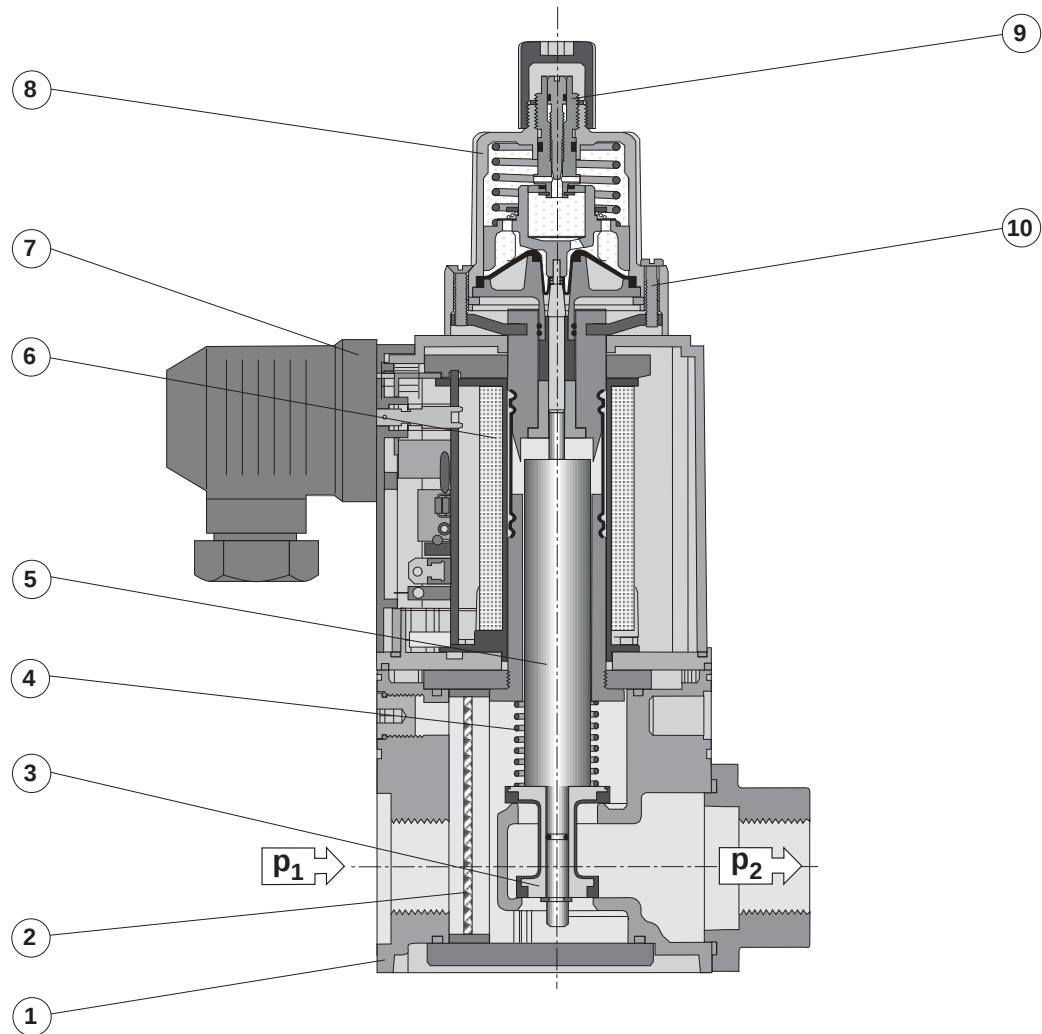
SV-... CE0036

Approvals in other important gas consuming countries.

SV	Single-stage solenoid valve zero current shutoff, fast-opening, fast-closing.
SV-D	Single-stage solenoid valve zero current shutoff, fast-opening, fast-closing. Manual limitation of gas flow by regulation (D).
SV-DLE	Single-stage solenoid valve zero current shutoff, slow-opening (L), fast-closing. With adjustable fast stroke (E) and manual limitation of gas flow by regulation (D).

Technical Data

Size Flange and pipe thread to ISO 7-1	SV 505 SV 507 SV 510 SV 515 SV 520 Rp 1/2 Rp 3/4 Rp 1 Rp 1 1/2 Rp 2 Pipe thread on inlet side, threaded flange on outlet side
Max. operating pressure	500 mbar (50 kPa)
Pressure stage	PN 1
Solenoid valve	Automatic shutoff valve as per EN 161: Class A, Group 2
Closing time	< 1 s
Opening time	SV..., SV-D...: < 1 s SV-DLE...: approx. 20 s at room temperature + 20 °C and without fast stroke
Fast stroke	adjustable on SV-DLE...
Flow restrictor	adjustable on SV-D... and SV-DLE...
Materials of gas-conveying parts	Housing: aluminium, steel, free of non-ferrous metals Seals in valve seat: NBR based, suitable for gases as per G260/I
Ambient temperature	-15 °C to +60 °C
Installation position	Solenoid arranged vertically to horizontally
Dirt trap	Integrated strainer. To protect the entire gas train, we recommend installing an upstream gas filter.
Measuring gas connection	G 1/8 DIN ISO 228: SV-... at valve inlet, in the centre; at output flange for SV-... 510 - 520; on both sides in front of and behind the valve seat, at the valve outlet in the centre. Pressure switch retrofittable: to the side, at the inlet and outlet flanges. Fitting a pressure switch can exclude measuring gas/ignition gas connection.
Voltage / frequency	~(AC) 50 - 60 Hz 230 V -15 % + 10 %, other voltages on request. Standard voltages: ~(AC) 24 V, 110 V, 120 V, =(DC) 48 V, =(DC) 24 V - 28 V
Rating / power consumption	at ~(AC) 230 V, + 20 °C: see type summary
Degree of protection	IP 65
Switch-on duration	100 % ED
Electrical connection	Plug-in connection to DIN EN 175 301-803
Radio interference suppression	Interference level N
Closed position signal contact	Type K01/1 (DIN tested) retrofittable, on SV-... 505 - 520
Valve proving system	Type VPS 504 S... retrofittable, on SV-... 510 - 520



- | | |
|---|----------------|
| 1 | Housing |
| 2 | Strainer |
| 3 | Valve disc |
| 4 | Closing spring |

- | | |
|---|-----------------------|
| 5 | Plunger |
| 6 | Solenoid coil |
| 7 | Electrical connection |
| 8 | Hydraulic brake |

- | | |
|-------------|-------------|
| Adjustment: | |
| 9 | Fast stroke |
| 10 | Main flow |

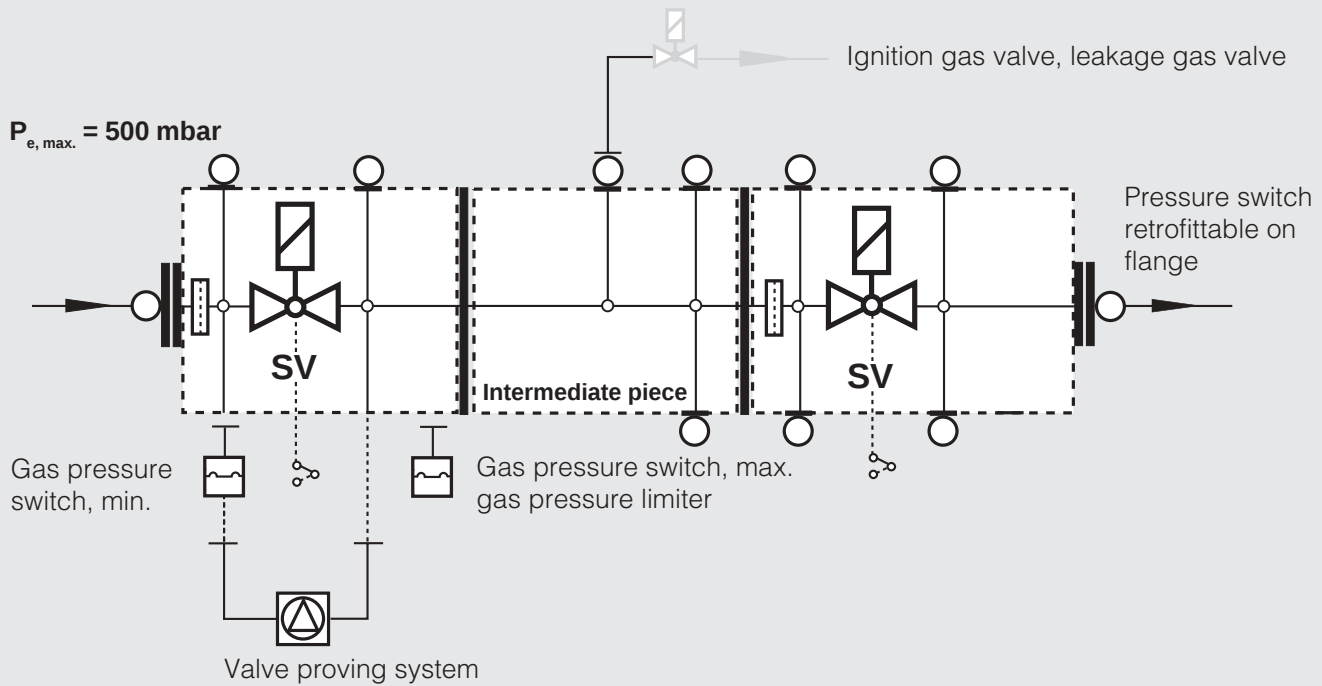
Functional Description

The DUNGS safety solenoid valve is an automatic shut-off valve powered by emergency current. The electromagnetic drive opens against closing spring 4.

The stroke of plunger 5 can be limited. The hydraulic brake 8 permits slow opening. The fast stroke 9 is adjustable. If the power supply (operating voltage) is interrupted, the closing

spring 4 closes the valve within < 1 s. The closed position of the valve can be monitored by a retrofittable closed position signal contact.

Safety solenoid valve modular system



Intermediate piece

Order Number 239 050

for: SV-... 510 - 515

Length 91 mm

Screw plug G 3/4 A

for ignition gas tap-off facility No.: 219 004

O-Ring No.: 215 947

Order Number 239 053

for: SV-... 520

Length: 107 mm

Screw plug G 1A

for ignition gas tap-off facility No.: 241 308

O-Ring No.: 215 986

System accessory information

Compact pressure switch for multiple actuators GW...A5

Data Sheet 5.02

Pressure switch GW...A6

Data Sheet 5.01

Valve proving system VPS 504

Data Sheet 8.10

Closed position indicator K01/1 for checking closed position of valves

Data sheet 12.01



Mounting a system accessory may exclude the fitting of another device.

Equipment variants SV-... single-stage operating mode	SV...			SV-D...			SV-DLE...		
	505/507	510/515	520	505/507	510/515	520	505/507	510/515	520
Flow restrictor	-	-	-	◆	◆	◆	◆	◆	◆
Opening delay	-	-	-	-	-	-	◆	◆	◆
Strainer	◆	◆	◆	◆	◆	◆	◆	◆	◆
Gas pressure switch retrofitable:									
GW...A6 valve inlet, central	◆	◆	◆	◆	◆	◆	◆	◆	◆
GW...A5 valve inlet, central	-	◆	◆	-	◆	◆	-	◆	◆
GW...A5 on outlet flange	-	◆	◆	-	◆	◆	-	◆	◆
GW...A5 on both sides before valve seat	◆	◆	◆	◆	◆	◆	◆	◆	◆
GW...A5 on both sides after valve seat	-	◆	◆	-	◆	◆	-	◆	◆
GW...A6 valve outlet central	◆	◆	◆	◆	◆	◆	◆	◆	◆
GW...A5 valve outlet central	-	◆	◆	-	◆	◆	-	◆	◆
Flange									
Rp 1/2	◆	◆	-	◆	◆	-	◆	◆	-
Rp 3/4	◆	◆	-	◆	◆	-	◆	◆	-
Rp 1	◆	◆	◆	◆	◆	◆	◆	◆	◆
Rp 1 1/4	-	◆	◆	-	◆	◆	-	◆	◆
Rp 1 1/2	-	◆	◆	-	◆	◆	-	◆	◆
Rp 2	-	-	◆	-	-	◆	-	-	◆
Flange retrofitable at inlet	◆	◆	◆	◆	◆	◆	◆	◆	◆
Ignition gas flange G 1/2 retrofitable	-	◆	◆	-	◆	◆	-	◆	◆
Closed position signal contact retrofitable	(◆)	◆	◆	(◆)	◆	◆	(◆)	◆	◆
Valve proving system directly retrofitable	-	◆	◆	-	◆	◆	-	◆	◆
Rectifier in terminal box	◆	◆	◆	◆	◆	◆	◆	◆	◆
◆ = Standard (◆) = on request - = not available									

Version	Order Number	p _{max.} [bar]	Connection Rp	Dimensions in [mm] a b c d e					Rating [VA]	Solenoid No.	Switch- ing ops/h ¹⁾	Weight [kg]
SV 505	231 488	0.5	Rp 1/2	156	96	62	200	75	20	020	1000	1.6
SV 507	240 315	0.5	Rp 3/4	156	96	62	200	75	20	020	1000	1.6
SV 510	231 489	0.5	Rp 1	219	119	87	277	95	25	030	1000	4.2
SV 515	243 818	0.5	Rp 1 1/2	219	119	87	277	95	25	030	1000	4.2
SV 520	240 318	0.5	Rp 2	238	165	114	370	126	50	040	1000	6.9
SV-D 505	240 321	0.5	Rp 1/2	156	96	62	200	75	20	020	1000	1.6
SV-D 507	240 324	0.5	Rp 3/4	156	96	62	200	75	20	020	1000	1.6
SV-D 510	240 326	0.5	Rp 1	219	119	87	277	95	25	030	1000	4.2
SV-D 515	243 820	0.5	Rp 1 1/2	219	119	87	277	95	25	030	1000	4.2
SV-D 520	240 332	0.5	Rp 2	238	165	114	370	126	50	040	1000	6.9
SV-DLE 505	240 334	0.5	Rp 1/2	205	96	62	215	75	20	020	100	1.7
SV-DLE 507	240 337	0.5	Rp 3/4	205	96	62	215	75	20	020	100	1.7
SV-DLE 510	240 339	0.5	Rp 1	266	119	87	277	95	25	030	100	4.3
SV-DLE 515	243 821	0.5	Rp 1 1/2	266	119	87	277	95	25	030	100	4.3
SV-DLE 520	240 345	0.5	Rp 2	284	165	114	370	126	50	040	100	7.0

¹⁾ Switching frequency on SV-DLE... also dependent on opening time setting

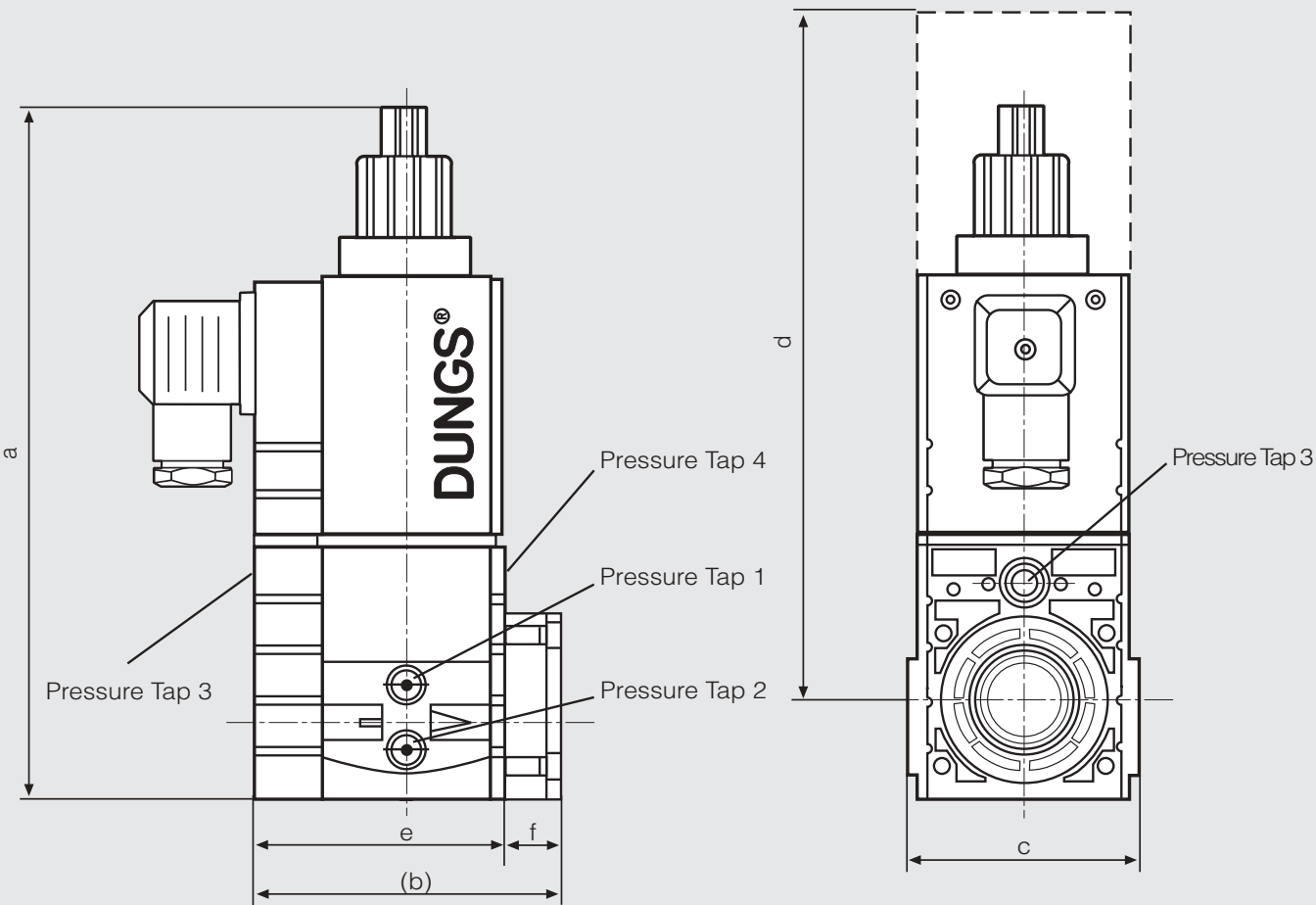
Supply schedule 1 valve
1 threaded flange, included
4 screws
1 O-Ring

Flange for	Rp	Dimensions [mm] f	Order No.	 2nd Flange, plug-in connection and system accessories must be ordered separately.
SV-... 505 / 507	Rp 1/2	21	242 220	
SV-... 505 / 507	Rp 3/4	21	242 221	
SV-... 505 / 507	Rp 1	23	242 222	
SV-... 510 / 515	Rp 1/2	24	242 223	
SV-... 510 / 515	Rp 3/4	24	242 224	
SV-... 510 / 515	Rp 1	24	242 225	
SV-... 510 / 515	Rp 1 1/4	24	242 226	
SV-... 510 / 515	Rp 1 1/2	24	243 817	
SV-... 520	Rp 1	25	242 227	
SV-... 520	Rp 1 1/4	25	242 228	
SV-... 520	Rp 1 1/2	39	242 229	
SV-... 520	Rp 2	39	242 230	

Electrical connection **Order No.**

Line socket, black 3-pole + PE 210 319

Mounting dimensions for SV ..., SV-D ... and SV-DLE ...



	Pressure tap 1*	Pressure tap 2*	Pressure tap 3	Pressure tap 4*	VPS directly retrofitable
SV- ... 505/507	$p_e (p_1)$	$p_a (p_2)$	$p_e (p_1)$	$p_a (p_2)$	no
SV- ... 510/515	$p_a (p_2)$	$p_e (p_1)$	$p_e (p_1)$	$p_a (p_2)$	yes*
SV- ... 520	$p_a (p_2)$	$p_e (p_1)$	$p_e (p_1)$	$p_a (p_2)$	yes*

* depending on the equipment variant selected

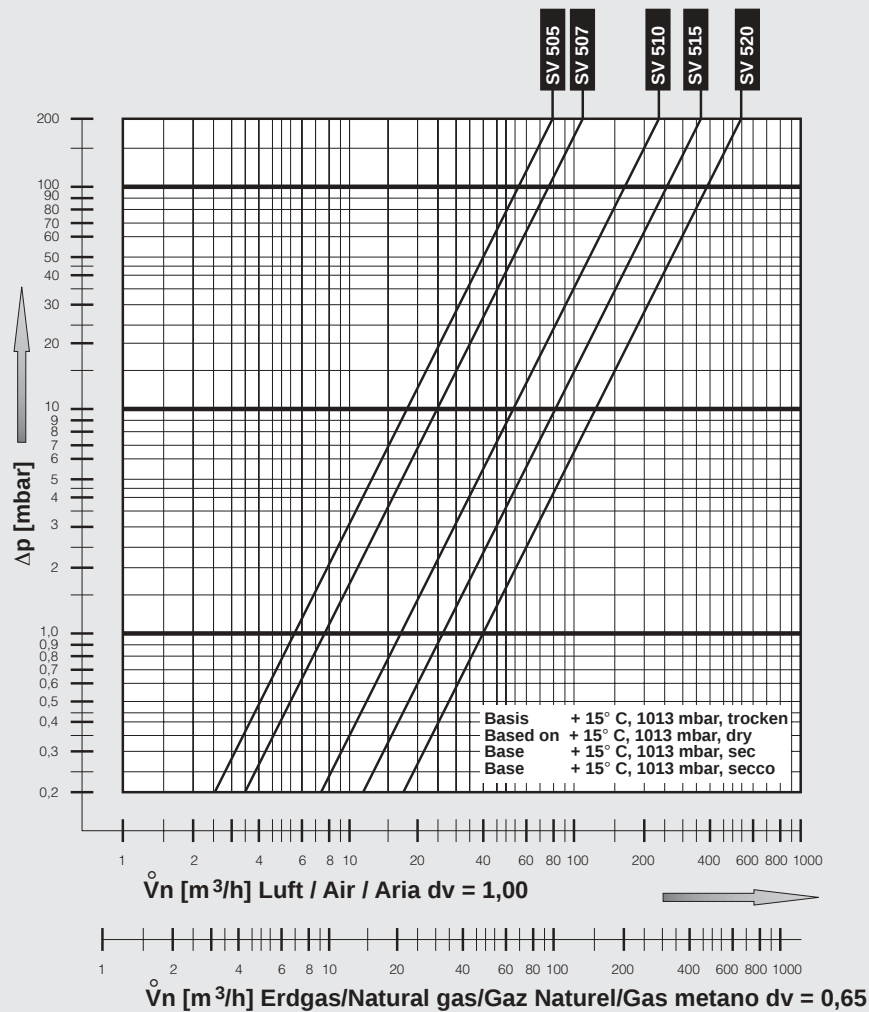
d = Space required for replacing solenoid

Safety solenoid valve
Flow diagram
Nominal width Rp 1/2 - Rp 2

SV
SV-D
SV-DLE

DUNGS®

Flow diagram



$$f = \sqrt{\frac{\text{Air density}}{\text{Density of gas used}}}$$

$$\dot{V}_{\text{gas used}} = \dot{V}_{\text{Air}} \times f$$

Gas type	Density [kg/m³]	dv	f
Natural gas	0.81	0.65	1.24
Town gas	0.58	0.47	1.46
Liquid gas	2.08	1.67	0.77
Air	1.24	1.00	1.00

We reserve the right to make any changes in the interests of technical progress.

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