High Flow Safety Valve
Pneumatic drive
Single-stage

HFSV...

6.40

Technical description

The DUNGS High Flow Safety Valve is a single-stage automatic butterfly valve according to EN 161 for gas burners, thermoprocess applications, gas engines and other gas-consuming equipment.

- max. operating pressure up to 3 or 5 bar (300 or 500 kPa)
- normally closed
- fast opening, fast closing
- pneumatic drive, single-action
- mountable closed position signal contact to monitor closed position of valve on request
- flange connection as per DIN EN 1092
- reliable function, rugged and maintenance-free
- high flow rates with minor pressure losses
- design without non-ferrous metals

Application

The butterfly valve is used for securing, limiting, shutting off and releasing gas supply to gas burners, thermoprocess applications, gas engines and other gas-consuming equipment.

The DUNGS butterfly valve HFSV... is suitable for gases according to G 262, gases of gas families 1, 2, 3 according to G 260 and other neutral gases.

The HFSV... SG is suitable for special gas applications (depending on evaluation of gas analysis specific for the system).

Approval

EC type test approval as per EC Gas Appliance Directive:

HFSV...	CE-0085 BU0186

EC type test approval as per EC Pressure Equipment Directive:

HFSV...	CE0036
HFSV... SG...	With manufacturer's declaration

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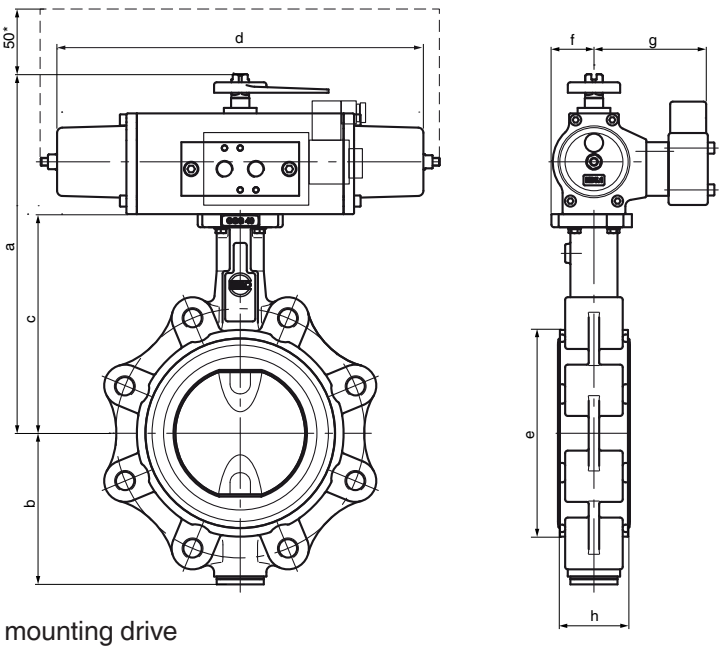
HFSV.../14	Single-stage butterfly valve, normally closed, fast opening, fast closing.
HFSV.../14 SG...	suitable for special gas applications (SG) : single-stage butterfly valve, normally closed, fast opening, fast closing

Specifications

Nominal diameters, DN	50 65 80 100 125 150 200 250 300 Connection flange as per DIN EN 1092 (PN 16)			
Max. operating pressure	5 bar (500 kPa) SG version: 3 bar (300 kPa)			
Butterfly valve	Valve as per EN 161, Class A, Group 2, single-stage mode			
Closing time	< 1 s			
Opening time	DN 50 - DN 150: < 1 s DN 200 - DN 300: ≤ 2.5 s			
Materials of gas-conveying parts		HFSV.../14	HFSV.../14 SG**H**	HFSV.../14 SG**V**
	Housing:	GGG 40	GGG 40	GGG40
	Shaft:	Stainless steel	Stainless steel	Stainless steel
	Washer:	Stainless steel	Stainless steel	Stainless steel
	Seals:	NBR	**H**NBR	**V**iton
Voltage/frequency	=(DC) 24 V - 28 V; ~(AC) 50 - 60 Hz 230 V -15 % + 10 %			
Rating / power consumption at ~(AC) 230 V, + 20 °C	Taper action: 11 VA Operation: 6 VA			
Switch-on duration	100 %			
Degree of protection	IP 65			
Electrical connection	Plug connection as per DIN 175301-803			
Switching rate	DN 50 - DN 125: max. 300/h DN 150 - DN 300: max. 180/h			
Ambient temperature	-10 °C up to + 60 °C			
Medium temperature Compressed air	-10 °C up to + 55 °C			
Medium temperature Gas	-15 °C up to + 60 °C SGH version: -15 °C bis + 120 °C SGV version: 0 °C bis + 150 °C			
Installation position	Drive standing vertically to lying horizontally			
Closed position signal contact	on request			
Control air	clean dry compressed air according to ISO 8573-1, Class 3 and 5, or nitrogen, with switching cycles ≥ 2/min lubrication, dew point min. 10 °C lower than ambient temperature			
Compressed air connection G 1/4	G 1/4			
Nominal pressure control air	6 - 8 bar (600 - 800 kPa)			

Dimensions [mm]
HFSV...



* Space requirement for mounting drive

Type	$p_{max.}$ [bar]	DN	Actu-ator	Vol-tage	Order Number	Dimensions [mm]								Weight [kg]
						a	b	c	d	e	f	g	h	
HFSV 50050/14	5	50	EB 5.1	~(AC) 230 V	255 392	233	85	126	280	95	31,5	94	43	7,7
HFSV 50065/14	5	65	EB 5.1		255 393	241	93,5	134,5	280	115	31,5	94	46	8,4
HFSV 50080/14	5	80	EB 5.1		255 394	264	104,5	157	280	138	31,5	94	46	11,5
HFSV 50100/14	5	100	EB 5.1		255 395	274	115,5	167,5	280	158	31,5	94	52	12,7
HFSV 50125/14	5	125	EB 6.1		255 396	301	128	180	351	188	39,5	103	56	14,9
HFSV 50150/14	5	150	EB 6.1		255 397	324	152	203	351	210	39,5	103	56	17,9
HFSV 50200/14	5	200	EB 8.1		255 398	366	177,5	228,5	408	268	45,5	108	60	25,6
HFSV 50250/14	5	250	EB 12.1		255 399	452	213	266	661	320	69	130	68	51,2
HFSV 50300/14	5	300	EB 12.1		255 400	477	238	290,5	661	370	69	130	78	58,6
HFSV 50050/14	5	50	EB 5.1	=(DC) 24 V	255 318	233	85	126	280	95	31,5	94	43	7,7
HFSV 50065/14	5	65	EB 5.1		255 319	241	93,5	134,5	280	115	31,5	94	46	8,4
HFSV 50080/14	5	80	EB 5.1		255 320	264	104,5	157	280	138	31,5	94	46	11,5
HFSV 50100/14	5	100	EB 5.1		255 321	274	115,5	167,5	280	158	31,5	94	52	12,7
HFSV 50125/14	5	125	EB 6.1		255 322	301	128	180	351	188	39,5	103	56	14,9
HFSV 50150/14	5	150	EB 6.1		255 323	324	152	203	351	210	39,5	103	56	17,9
HFSV 50200/14	5	200	EB 8.1		255 324	366	177,5	228,5	408	268	45,5	108	60	25,6
HFSV 50250/14	5	250	EB 12.1		255 325	452	213	266	661	320	69	130	68	51,2
HFSV 50300/14	5	300	EB 12.1		255 326	477	238	290,5	661	370	69	130	78	58,6
HFSV 30050/14 SGH	3	50	EB 5.1	=(DC) 24 V	255 336	233	85	126	280	95	31,5	94	43	7,7
HFSV 30065/14 SGH	3	65	EB 5.1		255 337	241	93,5	134,5	280	115	31,5	94	46	8,4
HFSV 30080/14 SGH	3	80	EB 5.1		255 338	264	104,5	157	280	138	31,5	94	46	11,5
HFSV 30100/14 SGH	3	100	EB 5.1		255 339	274	115,5	167,5	280	158	31,5	94	52	12,7
HFSV 30125/14 SGH	3	125	EB 6.1		255 340	301	128	180	351	188	39,5	103	56	14,9
HFSV 30150/14 SGH	3	150	EB 6.1		255 341	324	152	203	351	210	39,5	103	56	17,9
HFSV 30200/14 SGH	3	200	EB 8.1		255 342	366	177,5	228,5	408	268	45,5	108	60	25,6
HFSV 30250/14 SGH	3	250	EB 12.1		255 343	452	213	266	661	320	69	130	68	51,2
HFSV 30300/14 SGH	3	300	EB 12.1		255 344	477	238	290,5	661	370	69	130	78	58,6
HFSV 30050/14 SGV	3	50	EB 5.1	=(DC) 24 V	255 327	233	85	126	280	95	31,5	94	43	7,7
HFSV 30065/14 SGV	3	65	EB 5.1		255 328	241	93,5	134,5	280	115	31,5	94	46	8,4
HFSV 30080/14 SGV	3	80	EB 5.1		255 329	264	104,5	157	280	138	31,5	94	46	11,5
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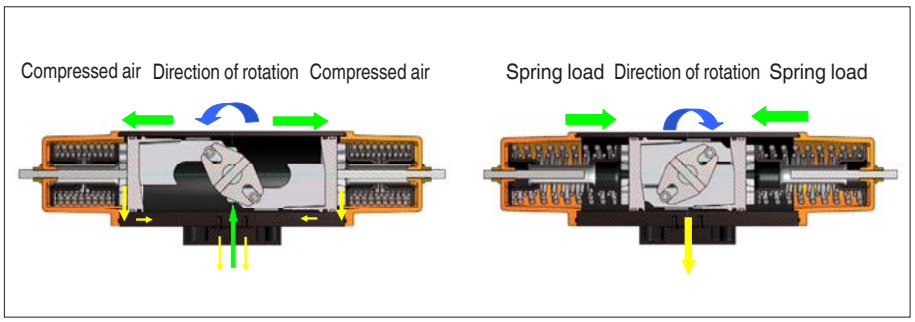
HFSV 30250/14 SGV	3	250	EB 12.1		255 334	452	213	266	661	320	69	130	68	51,2
HFSV 30300/14 SGV	3	300	EB 12.1		255 335	477	238	290,5	661	370	69	130	78	58,6

Driving function

A solenoid valve with integrated draw-in of the exhaust is preceding the pneumatic drive as default.

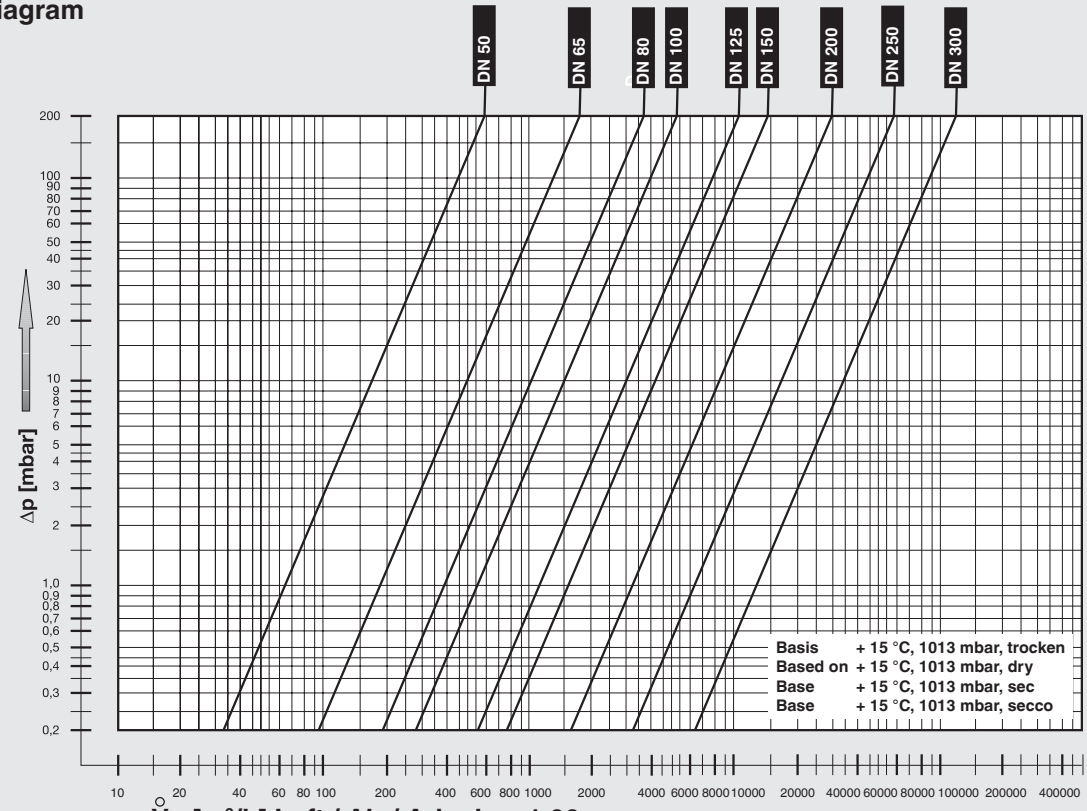
For switching the solenoid valve, the control connection of the valve is pressurized, the interior chamber of the cylinder is filled and the pistons move apart. During this process the motor shaft rotates counterclockwise, the valve is opened and the spring units are tensioned.

Switching of the solenoid valve during a pressure loss or power failure deaerates the interior chamber, the spring units under tension are released and press the pistons together < 1 s.



DUNGS®
Combustion Controls

Flow diagram



$$\dot{V}_{\text{verwendetes Gas/gas used}} = \dot{V}_{\text{Luft/air}} \times f$$

$$f = \sqrt{\frac{\text{Dichte Luft / Spec. weight air}}{\text{Dichte des verwendeten Gases / Spec. weight of gas used}}}$$

Gasart Type of gas	Dichte Spec. Wgt. [kg/m³]	dv	f
Erdgas Natural gas	0.81	0.65	1.24
Stadtgas City gas	0.58	0.47	1.46
Flüssiggas LPG	2.08	1.67	0.77
Luft Air	1.24	1.00	1.00

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

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