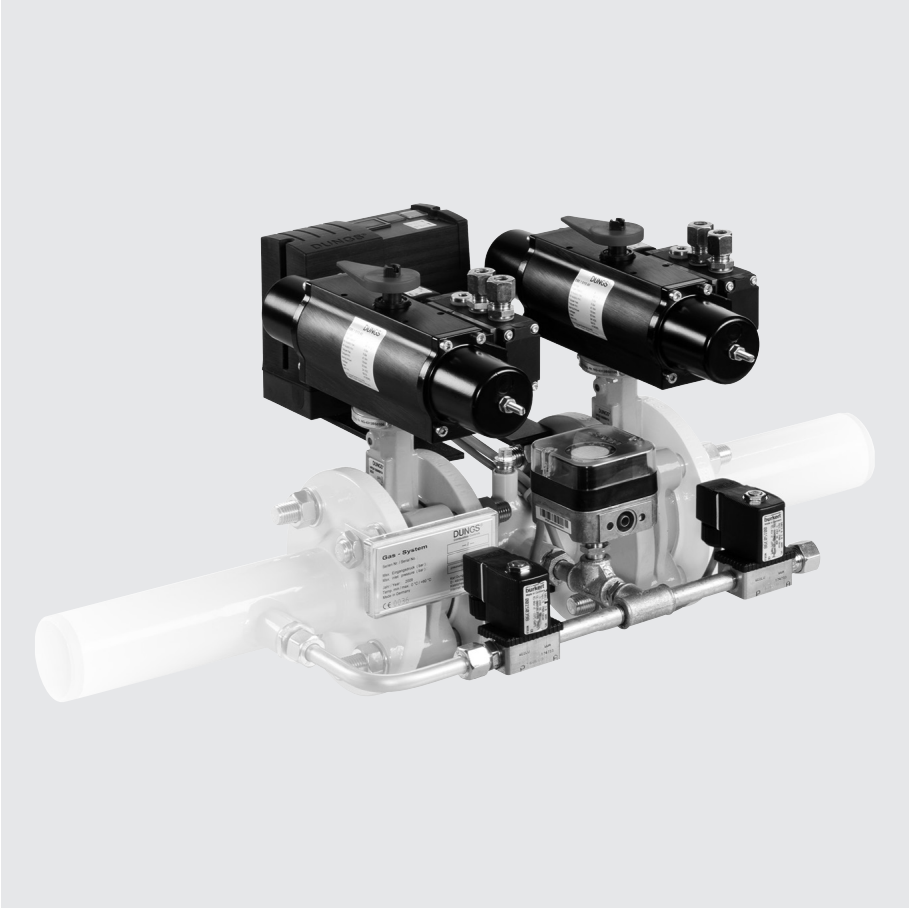
HF Bloc
Double valve combination
Nominal diameter DN 50 - DN 150

HF Bloc-...-VPS
HF Bloc-...-VPM/DSLC-HP

DUNGS®
Combustion Controls

7.70



Technology

DUNGS double valve combination HF Bloc-... is an integration of two pneumatically controlled butterfly valves to a compact fitting:

- automatic butterfly valves acc. to DIN EN 161, class A, group 2.
- max. operation overpressure of up to 5 bar (500 kPa)
- normally closed
- fast opening, fast closing
- high flow rates with minor pressure losses
- pneumatic actuator with an integrated solenoid valve to control compressed air supply
- small dimensions, low weight
- assembled valve check system

Application

Double valve combinations are used where previously two single valves have been used. Diverse control oriented tasks can be performed in combination with DUNGS gas pressure control devices and additional components.
Suitable for gases of gas families 1, 2, 3 acc. to DVGW G 260 and other neutral gases.
Suitable for applications with low switching frequency.

Approvals

HF Bloc-... with inspection certificate

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HF Bloc-...	Two one-level butterfly valves, normally closed, fast opening, fast closing. Integration of two automatic butterfly valves with a valve check system at the installation length according to DIN EN 558-1 for biogases, according to G 262, gases of gas families 1, 2, 3 and other neutral gases.

Technical data - Valve

Nominal diameter Flanges	DN 50 65 80 100 125 150 Connection flange as per DIN EN 1092-1 (PN 16) Construction length as per DIN EN 558-1
Max. operating pressure	HF Bloc-xxx-VPS: 500 mbar (50 kPa) HF Bloc-xxx-VPM/DSLC-HP: 5 bar (500 kPa)
Valve V1	automatic butterfly valve according to EN 161: Class A, Group 2
Valve V2	automatic butterfly valve according to EN 161: Class A, Group 2
Switching cycles	**Diameter DN** / **EN 161Switching cycles** 25 < DN ≤ 80 — 100.000 80 < DN ≤ 150 — 50.000 150 < DN ≤ 250 — 25.000
Closing time	< 1 s
Opening time	DN 50 - DN 150: < 1 s DN 200 - DN 300: ≤ 2.5 s
Materials of the gas-bearing parts	Housing: GGG 40 w/o non-ferrous Seals: NBR
Ambient temperature	0 °C to +60 °C
Mounting position	Drive standing vertically to lying horizontally
Dirt trap	For HF Bloc-... protection we recommend additional installation of an upstream connected gas filter, see data sheet 11.02

Technical data - pneumatic drive

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
Nominal pressure	6 - 8 bar (600 - 800 kPa)
Voltage / frequency	~(AC) 230 V (+10 % -15 %); 50-60 Hz =(DC) 24 V (+10 % -15 %) other voltage values on request
Power / current consumption entire fitting	Power at ~(AC) 230 V: Starting power 11 VA, holding power: 6 VA Power at =(DC) 24 V: Starting power 11 VA, holding power: 2 W
Protection type / duty cycle	IP 65 / 100 % duty cycle (Protection type of the HF Bloc-... see table page 4)
Electrical connection	Plug-in connection according to DIN 43650

System accessories
The double valve combination is prepared for direct mounting of DUNGS system accessories and additional equipment.
Please observe the technical data of the system accessories.

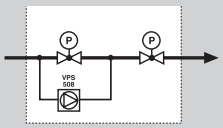
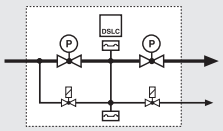
Information on system accessories

High-pressure switch for gas, air, smoke and exhaust gases GW...A4 HP
Datasheet 5.04

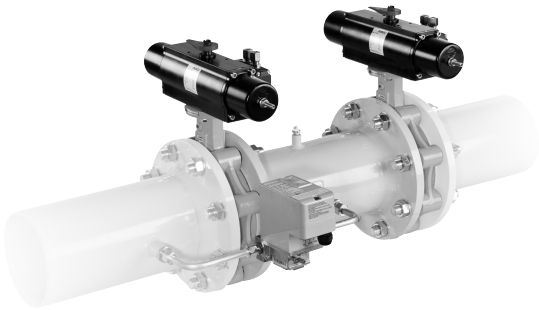
VPS 504 / 508 valve proving system
Datasheet 8.10 / 8.13

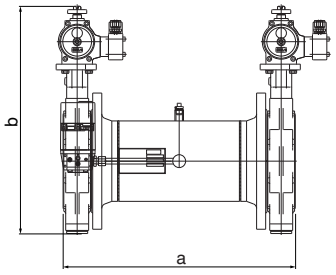
Control device for system tightness controls DSLC px Vx (24 VDC)
Datasheet 8.21

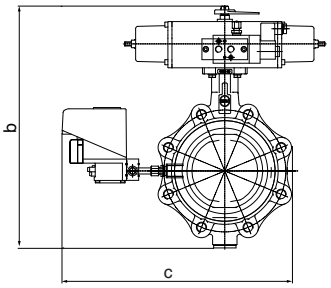
⚠ If a system accessory is added, it may not be possible to mount further devices.

Version	Symbol	Image	Pressure range	Equipment			
			$p_{max.}$	Valve V1	Valve V2	Valve proving system	min. / max. Pressure control device
HF Bloc-xxx-VPS			**500 mbar**	**X**	**X**	**VPS 508**	**-**
HF Bloc-xxx-VPM/DSLC-HP			**5 bar**	**X**	**X**	**DSLC** **MV**	**GW...A4 HP**

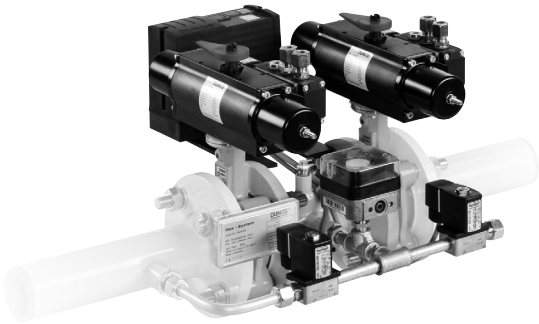
Dimensions for HF Bloc-...-VPS

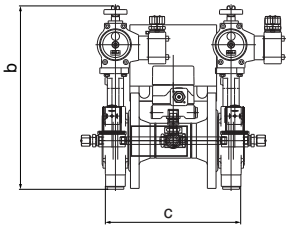


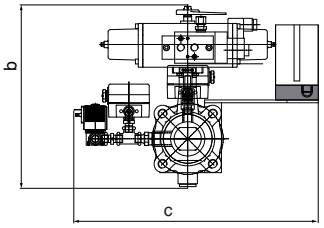




Dimensions for HF Bloc-...-VPM/DSLC-HP





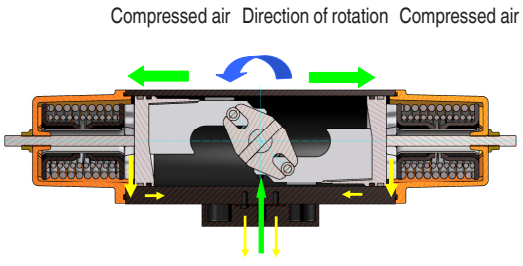


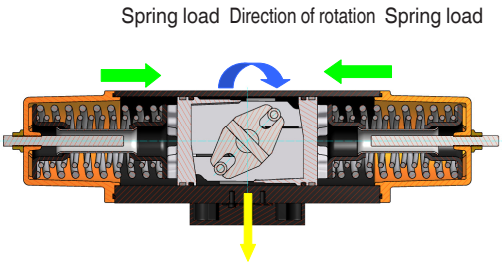
Version	Connection DN	Dimensions [mm]			Accessories
		a	b	c	
HF Bloc-5080-VPS	80	310	377	450	VPS 508
HF Bloc-5100-VPS	100	350	398	450	VPS 508
HF Bloc-5125-VPS	125	400	437	450	VPS 508
HF Bloc-5150-VPS	150	480	484	450	VPS 508
HF Bloc-5050-VPM/DSLC-...	50	240	326	430	DSLC+MV+GW
HF Bloc-5065-VPM/DSLC-...	65	290	343	435	DSLC+MV+GW
HF Bloc-5080-VPM/DSLC-...	80	310	377	440	DSLC+MV+GW
HF Bloc-5100-VPM/DSLC-...	100	350	398	455	DSLC+MV+GW
HF Bloc-5125-VPM/DSLC-...	125	400	437	470	DSLC+MV+GW
HF Bloc-5150-VPM/DSLC-...	150	480	484	484	DSLC+MV+GW

Version	Order Number	Voltage	$p_{max.}$ [bar]	Connection DN	Volume [l]	Weight [kg]	Protection
HF Bloc-5080-VPS	255 804	~(AC) 230 V	0,5	DN 80	1,30	35	IP 54
HF Bloc-5100-VPS	255 805		0,5	DN 100	2,40	40	
HF Bloc-5125-VPS	255 806		0,5	DN 125	4,20	50	
HF Bloc-5150-VPS	255 807		0,5	DN 150	7,70	63	
HF Bloc-5080-VPS	255 808	=(DC) 24 V	0,5	DN 80	1,30	35	IP 54
HF Bloc-5100-VPS	255 809		0,5	DN 100	2,40	40	
HF Bloc-5125-VPS	255 810		0,5	DN 125	4,20	50	
HF Bloc-5150-VPS	255 811		0,5	DN 150	7,70	63	
HF Bloc-50050-VPM-HP	255 830	~(AC) 230 V	5	DN 50	0,40	24	IP 42
HF Bloc-50065-VPM-HP	255 831		5	DN 65	0,80	27	
HF Bloc-50080-VPM-HP	255 832		5	DN 80	1,30	36	
HF Bloc-50100-VPM-HP	255 833		5	DN 100	2,40	42	
HF Bloc-50125-VPM-HP	255 834		5	DN 125	4,20	53	
HF Bloc-50150-VPM-HP	255 835		5	DN 150	7,70	66	
HF Bloc-50050-DSLC-HP	255 836	=(DC) 24 V	5	DN 50	0,40	24	IP 42
HF Bloc-50065-DSLC-HP	255 837		5	DN 65	0,80	27	
HF Bloc-50080-DSLC-HP	255 838		5	DN 80	1,30	36	
HF Bloc-50100-DSLC-HP	255 839		5	DN 100	2,40	42	
HF Bloc-50125-DSLC-HP	255 840		5	DN 125	4,20	53	
HF Bloc-50150-DSLC-HP	255 841		5	DN 150	7,70	66	

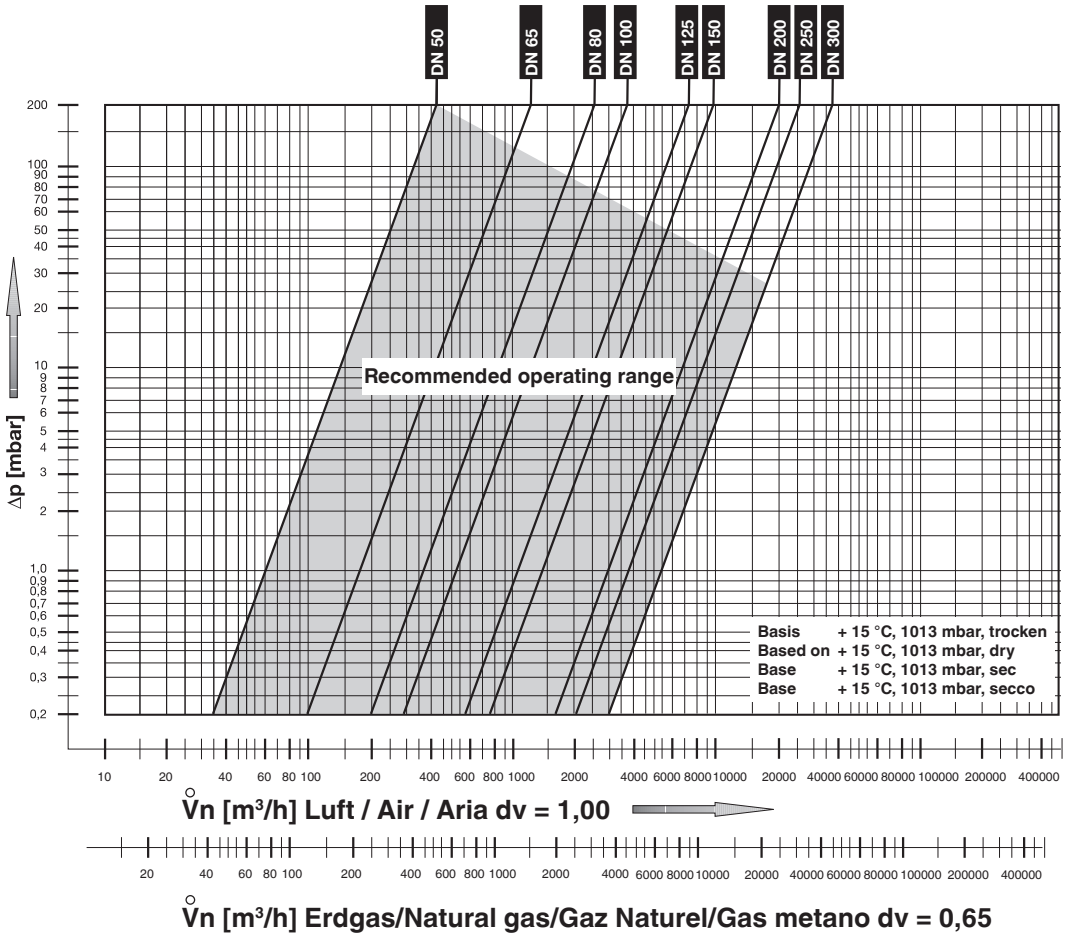
Deliveries from 2012 onwards will receive the new puck as position indicator.
The yellow indicators mark the position of the flap disc.
The metal pins integrated into them can be used to actuate all commercially available initiators. This can be used as position feedback.

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.





Volume flow pressure difference characteristics



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

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

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

High Flow Safety Valve
Pneumatic drive
Single-stage

HFSV...

For use in combination with one or two automatic shut-off devices to EN 161
We recommend the use of a VPM to DIN EN 1643.

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.

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:

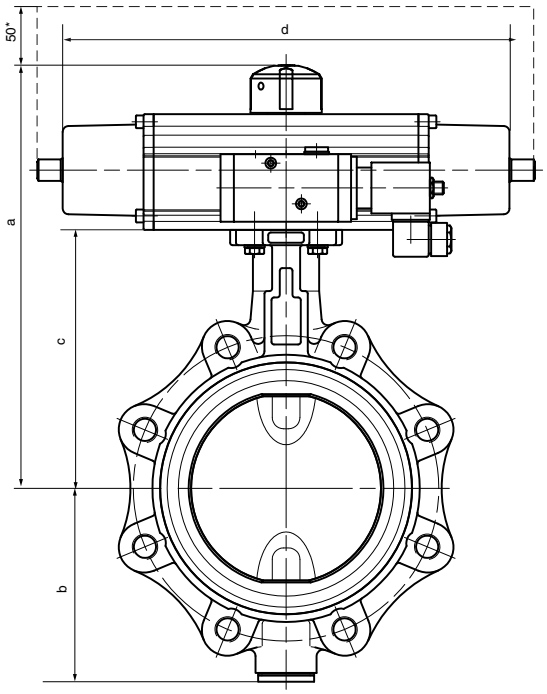
HFSV...	CE0036

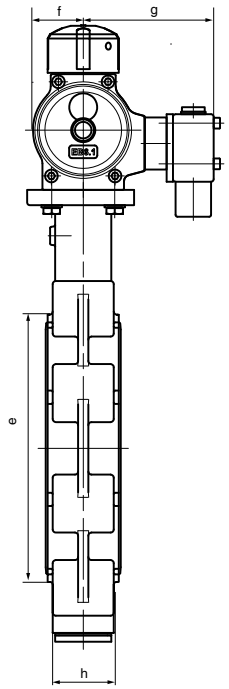
HFSV.../14 Single-stage butterfly valve, normally closed, fast opening, fast closing.

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)
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 Housing: GGG 40 Shaft: Stainless steel Washer: Stainless steel Seals: NBR
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	0 °C up to + 60 °C
Medium temperature Compressed air	0 °C up to + 55 °C
Medium temperature Gas	-15 °C up to + 60 °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...





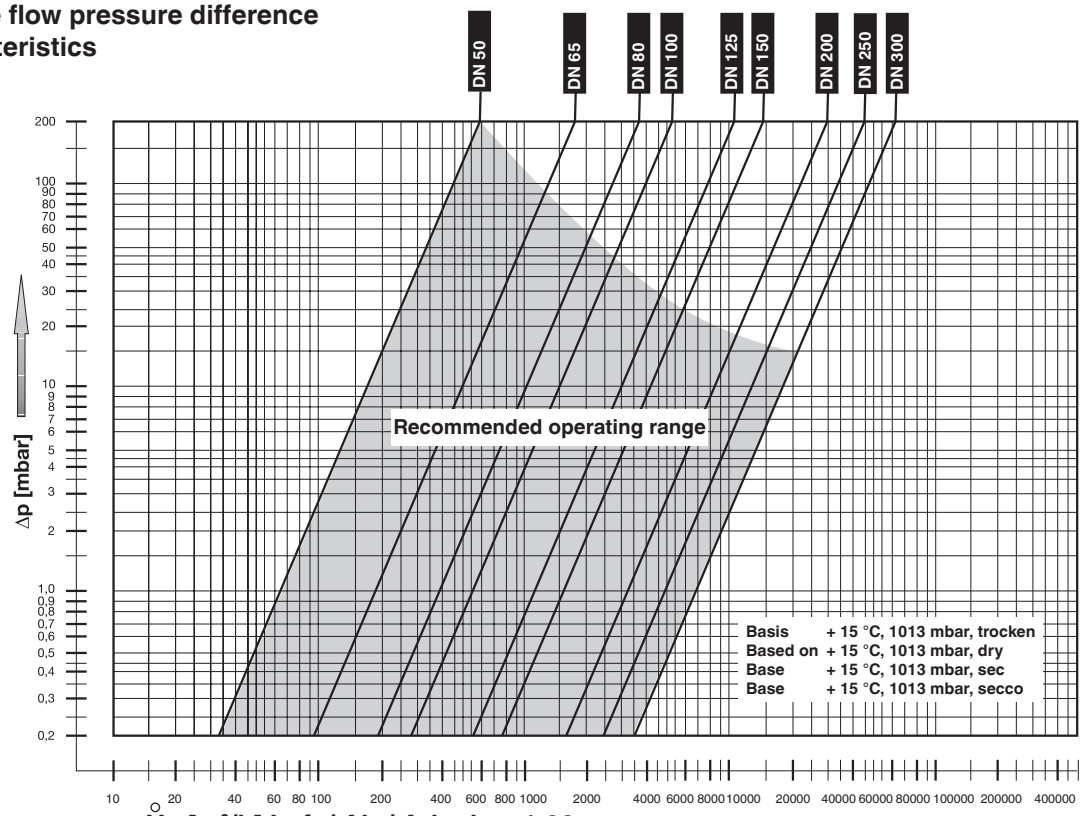
* Space requirement for mounting drive

Type	$p_{max.}$ [bar]	DN	Actuator	Voltage	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

High Flow Safety Valve
Pneumatic drive
Single-stage
HFSV...

DUNGS®
Combustion Controls

Volume flow pressure difference characteristics



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

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

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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