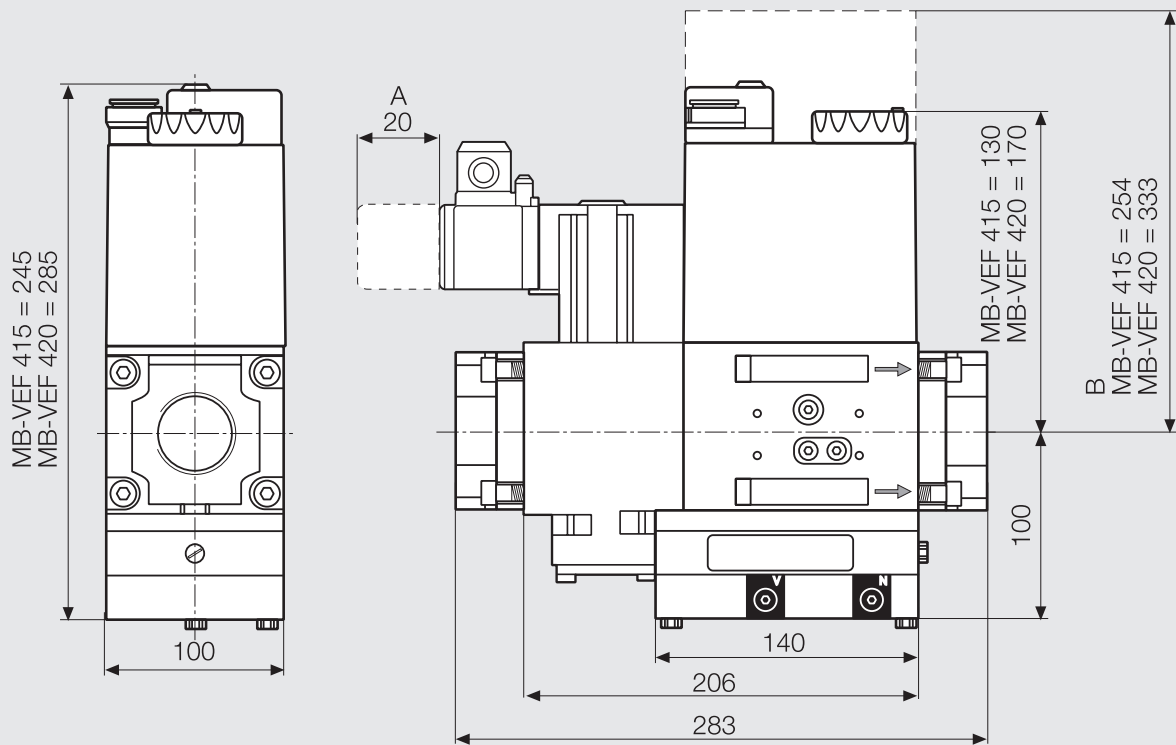


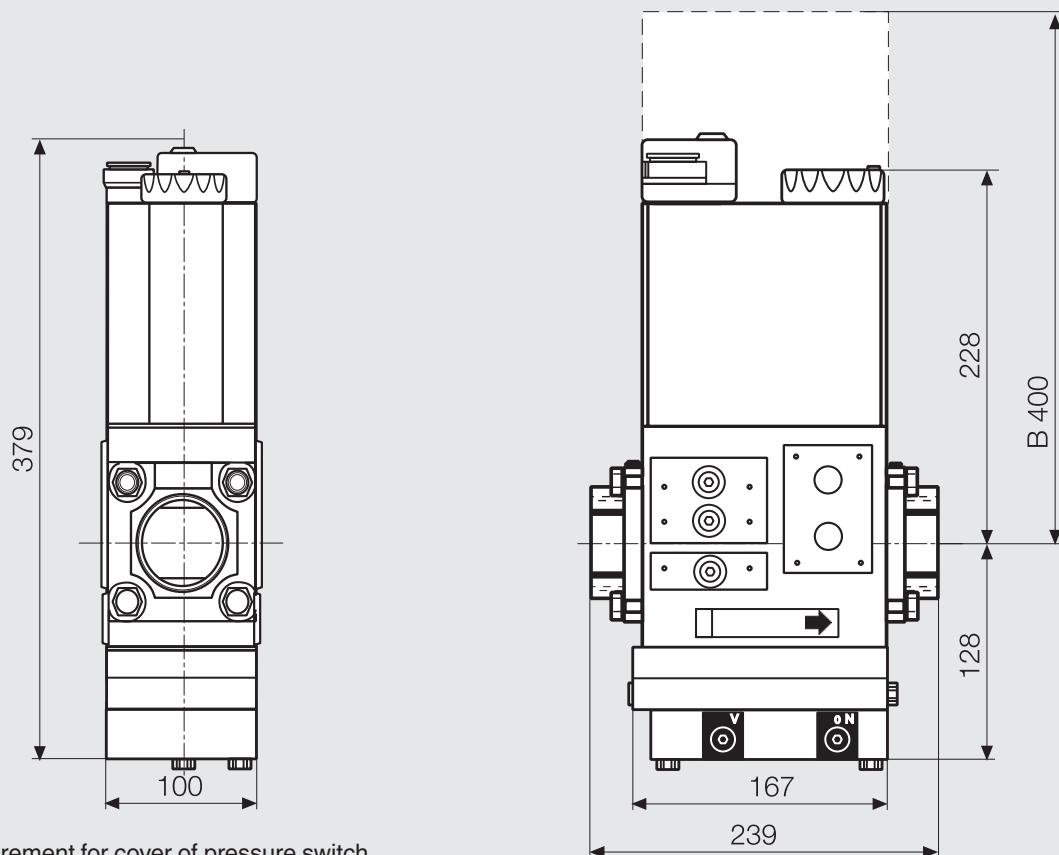
Specifications

Nominal diameters Flange with pipe threads as per ISO 7/1 (DIN 2999)	MB-VEF 415 B01, MB-VEF 420 B01 Rp 1, 1 1/4, 1 1/2, 2 and their combinations	MB-VEF 425 B01 Rp 2
Max. operating pressure Input pressure ranges	360 mbar MB-...VEF S10/12 MB-...VEF S30/32	p_e : 5 mbar to 100 mbar p_e : 100 mbar to 360 mbar
Guiding range Burner pressure range	p_L : 0.4 to 100 mbar p_{Br} : 0.5 to 100 mbar	
Media	Gases of families 1, 2, 3 and other neutral gaseous media	
Ambient temperature	-15 °C to +70 °C (Do not operate MB-VEF below 0 °C in liquid gas systems. Only suitable for gaseous liquid gas, liquid hydrocarbons destroy sealing materials)	
Dirt trap unit	Suitable gas filter must be installed upstream for safety reasons. Filter housing with microfilter, for MB-VEF 415/420. For MB-VEF 425, insert gas filter, e.g. type GF 520/1. Datasheet pre-mount filter	
Pressure switch	Types GW...A5, ÜB...A2 / NB...A2 to DIN EN 1854 may be attached. For further information, refer to Datasheets 5.02 and 5.07 "Pressure Switches for DUNGS Multiple Actuators"	
Servo pressure regulator	Pressure regulator compensated for residual pressure, leakproof seal when switched off by means of valve V1 as per DIN EN 88-1 Class A and EN 12067-1. Gas-air ratio control with adjustable ratio V as well as zero point correction N and firing chamber pressure connection.	
Ratio setting range V	Ratio V = p _{Br} / p _L 0.75 : 1 ... 3 : 1; other ratios on request	
Zero point correction N	Possible	
Solenoid valve V1 Solenoid valve V2	Valve as per DIN EN 161 Class A Group 2, fast closing, fast opening Valve as per DIN EN 161 Class A Group 2, fast closing, fast opening	
Measuring	G 1/8 DIN ISO 228, on inlet and outlet flange, on both sides downstream of dirt trap, on both sides between valves (pressure switch mounting can partly exclude measuring)	
Burner pressure monitor p _{Br}	Downstream of valve V2, pressure switch mountable laterally to adapter Pressure tap on outlet flange	
Pulse and connection lines	G 1/8 connection as specified to DIN ISO 228 for burner pressure (p _{Br} ; GAS), blower pressure (p _L ; AIR), firing chamber pressure (p _F ; combustion, atmosphere) Pulse and connection lines must be made of steel to PN1, DN4. Condensate of pulse and connection lines must not enter into fitting. Strictly follow the operating and mounting instructions.	
Voltage/frequency	MB-VEF 415/420 B01:	50 - 60 Hz, 230 V AC, -15% +10 %
	MB-VEF 425 B01:	50 - 60 Hz, 230 V AC, -15% +10 %
Electrical connection	Plug connection as per DIN EN 175301-803 for valves and pressure switches	
Rating/power consumption	see type overview	
Switch-on duration	100 %	
Protection type/interference suppression	IP 54 as per IEC 529 (EN 60529)/interference degree N	
Materials of gas-wetted parts	Housing Diaphragms, seals Solenoid drive	aluminium diecasting NBR basis, Silopren (silicon rubber) Steel, brass, aluminium
Installation position	Vertical with solenoid pointing upward	

Dimensions
MB-VEF 415/420



MB-VEF 425

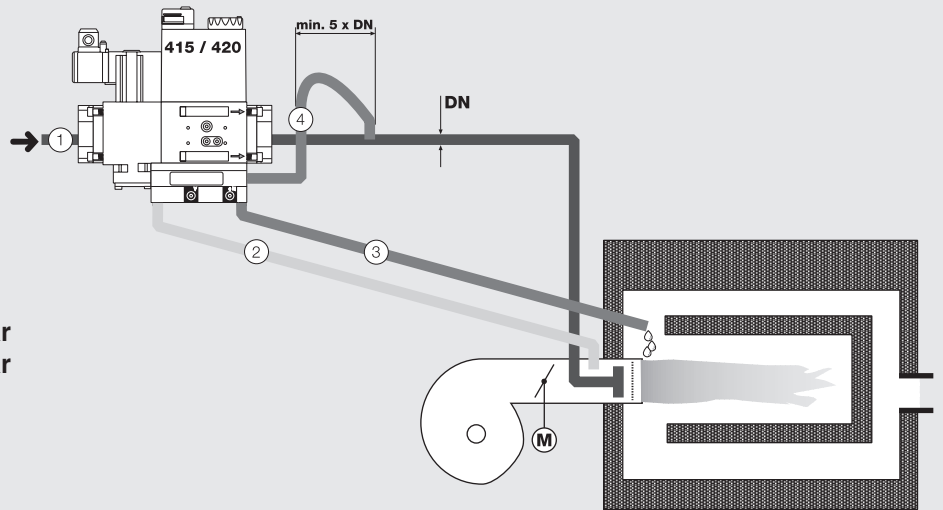


A = Space requirement for cover of pressure switch
B = Space requirement for changing solenoid

Type	Rp	Opening time	P _{max.} [VA]	I _{max.} [A] ~(-AC) 220 V ...240V	Weight [kg]
MB-VEF 415 B01	Rp 1 1/2	< 1 s	50	0,37	6,7
MB-VEF 420 B01	Rp 2	< 1 s	90	0,37	7,9
MB-VEF 425 B01	Rp 2	< 1 s	110	0,46	12,6

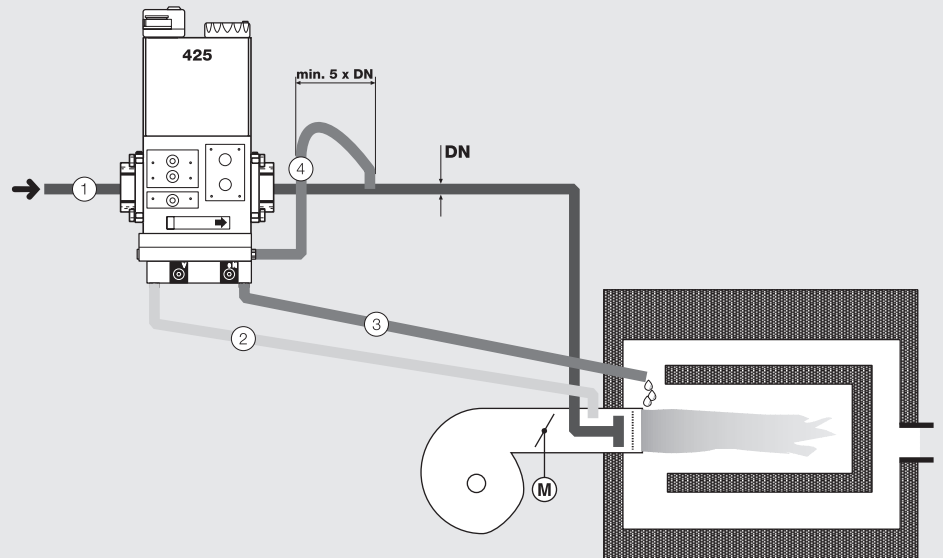
Installation of pulse lines MB-VEF 415 / 420 / 425

- 1 p_e : gas input pressure
S10/12: 5 - 100 mbar
S30/32: 100 - 360 mbar
- 2 p_L : blower pressure, air
0.4 - 100 mbar
- 3 p_F : firing chamber pressure
-20 mbar ... +50 mbar
or atmosphere
 $\Delta p_L \text{ max.} = p_L - p_F = 100 \text{ mbar}$
 $\Delta p_{Br} \text{ max.} = p_{Br} - p_F = 100 \text{ mbar}$
- 4 p_{Br} : Burner pressure, gas
0.5 - 100 mbar



Pulse flange set

Pulse line 4 can be replaced by a pulse flange. The pulse flange permits an internal pulse tap p_{Br} in connection with the output flange.



Pulse lines

⚠ Pulse lines 2, 3, 4 must correspond to $\geq \text{DN } 4$ (4 mm dia.), PN 1 and be made of steel. **Other materials of pulse lines are only permissible as per the type test together with the burner.**

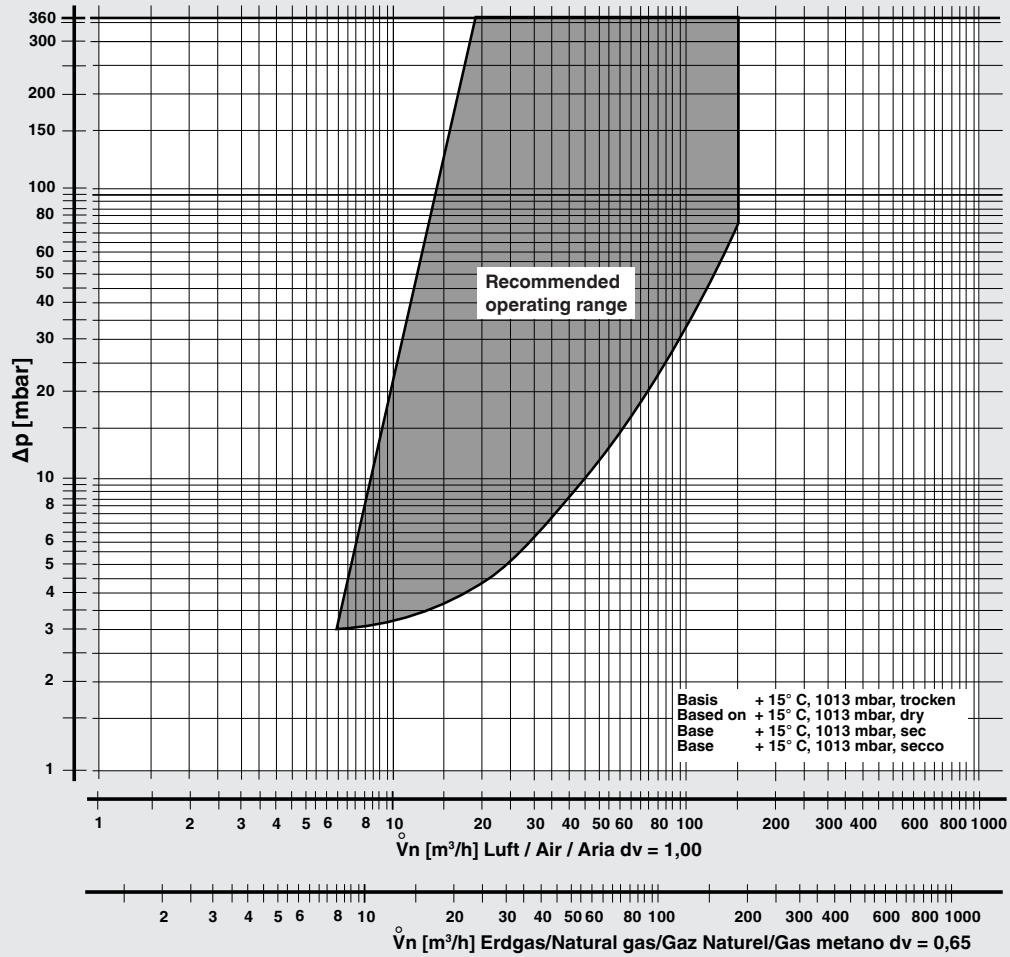
⚠ Route pulse lines so that **no condensate** can flow into the MB-VEF.

⚠ Route pulse lines resistant to cracks and deformation. **Keep pulse lines short.**

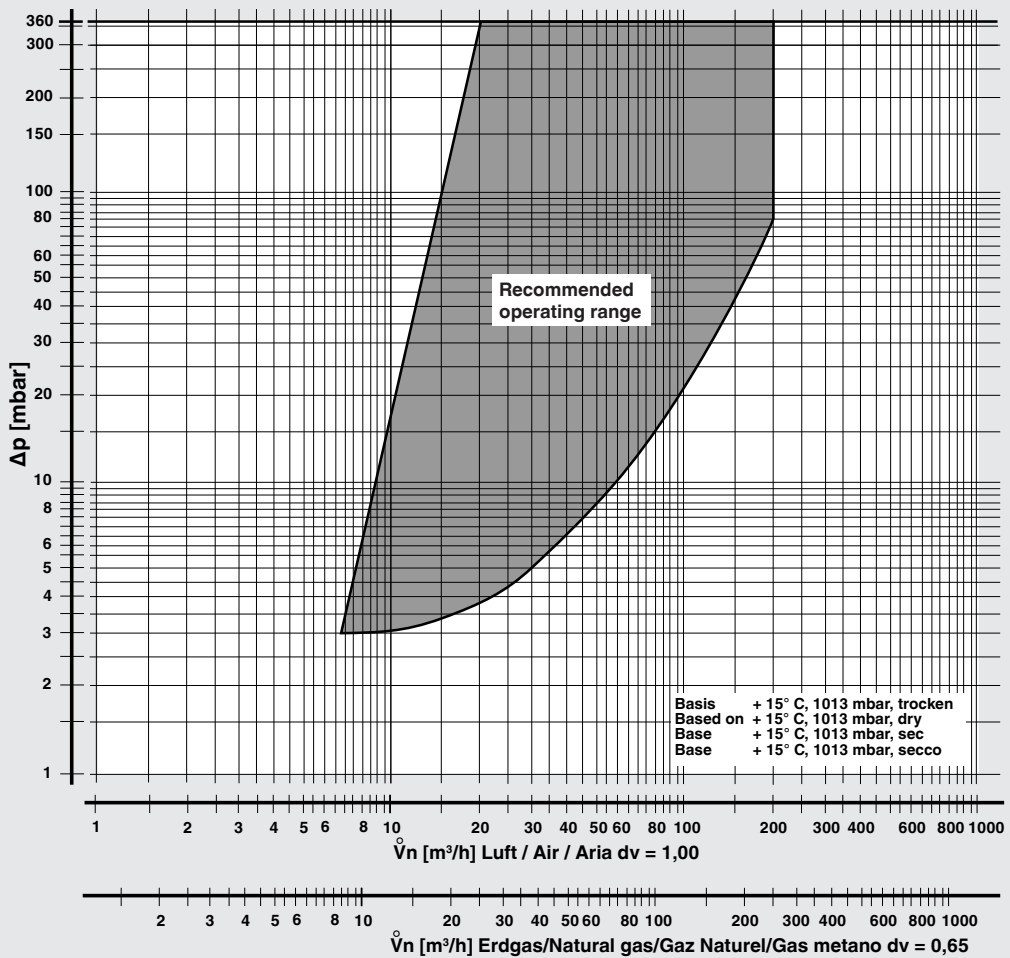
Selection of pulse flange and threaded flange

Pulse flange set	Order No.	\varnothing [mm]	Length [mm]	Order No. Threaded flange Rp 1 1/2	Order No. Threaded flange Rp 2
MB-VEF 415/420	227 517	43	20	221 884	221 926
MB-VEF 415/420	228 140	53	20	–	221 926
MB-VEF 425	227 518	55	20	–	215 384

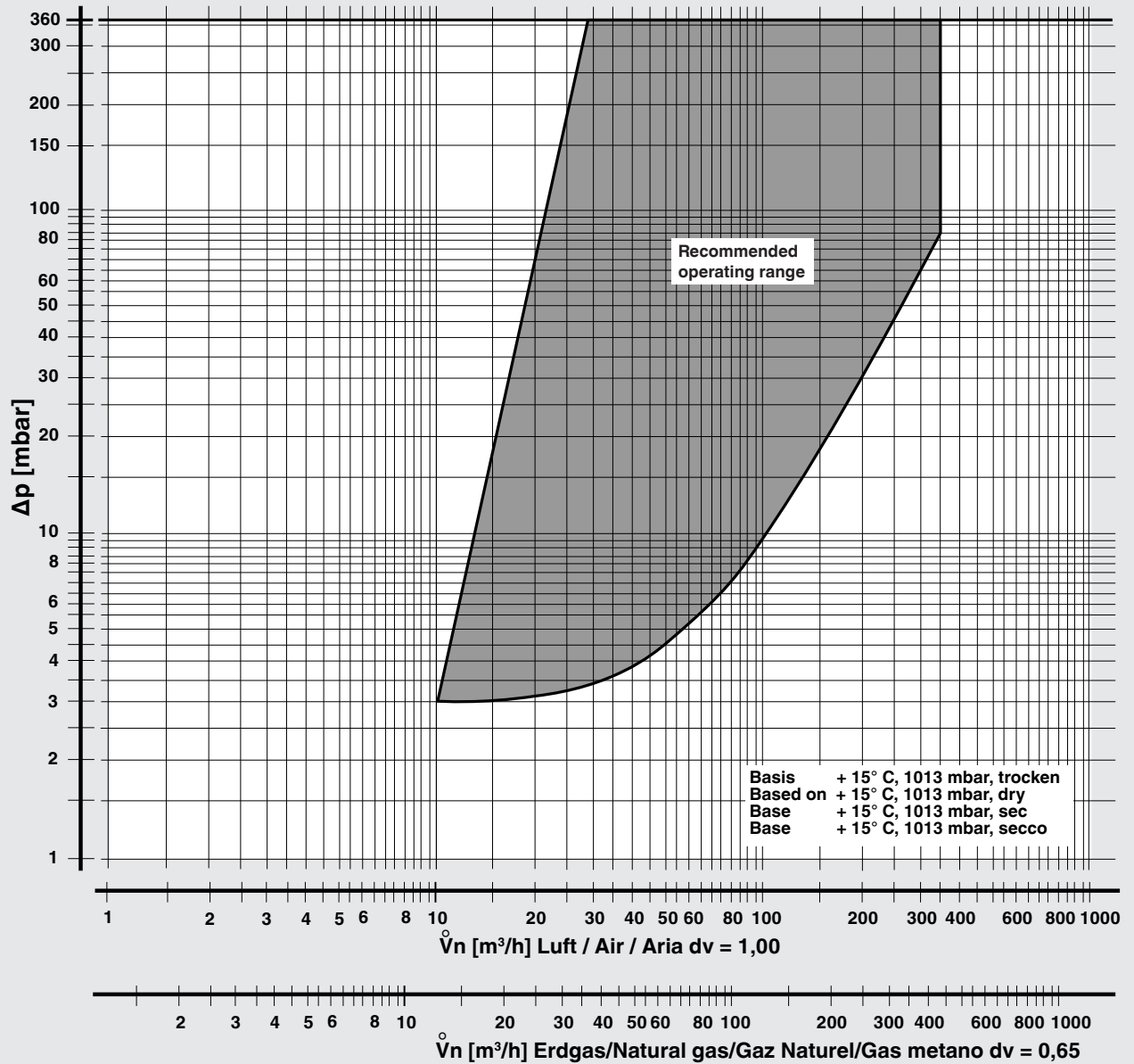
Flow diagram MB-VEF 415 B01 Rp 1 1/2, with microfilter



Flow diagram MB-VEF 420 B01 Rp 2, with microfilter



Flow diagram MB-VEF 425 B01 Rp 2, with microfilter



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

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

Type of gas	Density [kg/m³]	d_v	f
Nat. gas	0.81	0.65	1.24
City gas	0.58	0.47	1.46
LPG	2.08	1.67	0.77
Air	1.24	1.00	1.00

GasMultiBloc
 Combined regulator and
 safety valve
 Infinitely variable air/gas ratio
 control mode

MB-VEF 415 - 425 B01



Characteristic design data of MB-VEF layout	Application 1	Application 2
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Gas Type of gas/spec. density [kg/m ³]		
Volumetric flow V [m³/h] V _{min.} V _{max.}		
Input pressure p_e [mbar] p _{e,min.} p _{e,max.}		
Burner pressure p_{Br} [mbar] at V _{min.} at V _{max.}		
Blower pressure p_L [mbar] at V _{min.} at V _{max.}		
Firing chamber pressure p_F [mbar] at V _{min.} at V _{max.}		
Control range, performance range		
Adjustment time of air volume throttle from small load to large load [s]		
Starting load [m³/h]		
Company/Address		
Name/Contact person		
Telephone No.		

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

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