



GasMultiBloc® MBE-S Single shut-off valve

MBE-S Single shut-off valve combines the housing with a safety shut-off valve (ValveBody-S) and electronic drive (ValveDrive) for actuating the safety valve and, optionally, for controlling the safety valve outlet pressure.

- Safety shut-off valve acc. EN 161
- Maximum inlet pressure 70 kPa (700 mbar)
- Voltages: 100-240 VAC & 24 VDC
- Regulator function as per EN 88-1 & EN 88-3
- 3 sensors (PS) cover the outlet pressure range of (0-50 kPa)
- High flow rate with low pressure loss
- Biogas tested to max. 1.0 vol. % H₂S
- Modular system
- Simple assembly
- Lightweight design
- Worldwide approvals
- Main volume adjustment (optional)
- Suitable for up to 100 % hydrogen

ValveBody VB	3
ValveDrive VD	4
PressureSensor PS	5
MBE-SD Manual Flow Adjustment	6
Technical data	7-8
Approvals	9
Dimensions	10
Pressure taps	11
MBE-S components	12-14
System accessories	15
Flow diagram	16-21
Contact	22

ValveBody (VB-...-S)

The ValveBody-S is a housing for a spring-loaded safety shut-off valve. The valve is normally closed.



ValveDrive (VD)

The ValveDrive is an electronic actuator with a stepper motor for the following voltages: 100-240 VAC 50/60 Hz and 24 VDC. Each ValveDrive can be combined with all ValveBody versions. Operation mode is indicated with a blue LED. A visual position indicator is integrated as standard.

The following models are available:

- VD-V-(AC/DC)
Open/close valve drive
- VD-R-(AC/DC)
Open/close valve drive with pressure regulation function
- VD-(V/R)-(AC/DC)-POC
Open/close valve drive with optional pressure regulation function and integrated Proof of Closure function



PressureSensor (PS)

The PressureSensor is a high-precision electronic pressure sensor with a digital interface. The PS is mounted on the outlet side of the ValveBody. The outlet pressure is measured by the PressureSensor outlet side or downstream of the VB. The pressure signal is transmitted to the VD-R via the BUS cable. The nominal value is pre-adjusted manually.



MBE-SD Manual Flow Adjustment

The MBE-SD Manual Flow Adjustment is a manual setting device for limiting the main gas volume.



The use of MBE-SD Manual Flow Adjustment is exclusively permitted with VB-065...150 type devices. VB-...-S type devices are not permitted for this purpose.

MultiBloc® Generation E multifunctional control

Nominal diameters	VB-065-S – VB-150-S	DN 65 – 150
Maximum inlet pressure	VB-065-S – VB-150-S	$p_{max.} = 70 \text{ kPa (700 mbar)}$
Outlet pressure range	Only in combination with VD-R... and PS-... PS-0: PS-10/40: PS-50/200:	0 kPa / 0 "W.C. 0.4-10 kPa / 1.6-40 "W.C. 2.0-50 kPa / 8.0-200 "W.C.
Accuracy class	$\pm 5 \%$ or $\pm 50 \text{ Pa}$ (as per EN 88-3)	
Opening time	approx. 6 sec. until 100 % open	
Closing time	< 1 sec.	
Switching rate	max. 360/h	
Ambient temperature	-20 °C to +60 °C	
Process liquids / gases	As per EN 437:2018 Suitable for gases of gas families 1, 2, 3 100 % hydrogen (dry), bio and digester gases (DVGW G 260 (A)) up to max. 1.0 vol. % H ₂ S (dry). Do not operate the MBE... below 0 °C in liquid gas systems. Only suitable for gaseous liquid gas, liquid hydrocarbons destroy the sealing materials.	
Valve V1	Class A (EN 161), Group 2 (EN 13611)	



MultiBloc® Generation E multifunctional control



Electrical connection	Plug as per DIN EN 175301-803 Class II control (EN/UL 60730-1)	
Voltage / frequency	VD-...-AC: 100-240 VAC, 50/60 Hz VD-...-DC: 24 VDC ± 30 % Duty cycle 100 %	
Power consumption per VD	VD-...-AC: max. 16 VA / 8 W per drive Starting current max 1 A for 0.02 s VD-...-DC: max. 8 W per drive Starting current max 10 A for 0.02 s	
Degree of protection	IP 55 as per IEC 529 (EN 60529)	
Dirt trap device	Filter A suitable gas filter must be installed upstream.	
Vibration resistance	VD-...-AC: tested as per EN 13611 VD-...-DC: tested as per EN 13611 & MIL-810G	
Duty cycle	100 %	
Installation position	Vertically upright to lying horizontally.	
Materials of gas conveying parts	Housing:	Aluminium
	Seals:	VMQ

CE: EN 13611; EN 161; EN 126; EN 88-1; EN 88-3

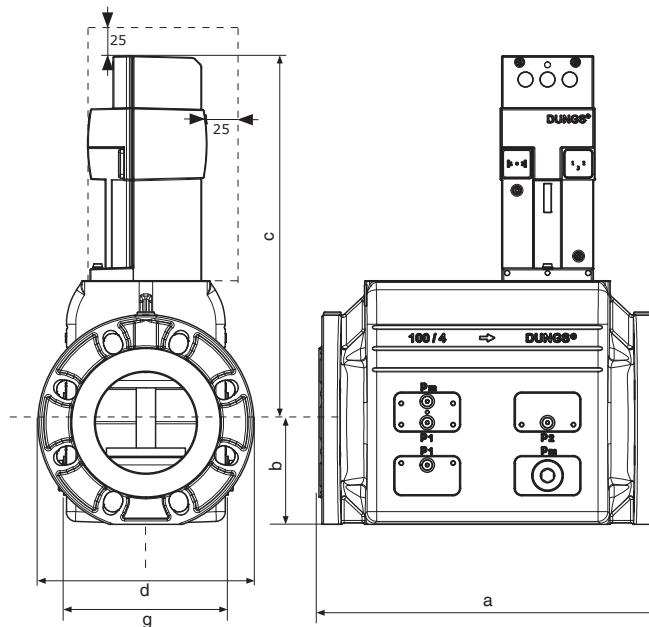
EAC: TP TC 010/2011; TP TC 004/2011; TP TC 020/2011; TP TC 016/2011

UA: EN 13611; EN 161; EN 88-1

UKCA: EN 13611; EN 161; EN 126; EN 88-1; EN 88-3



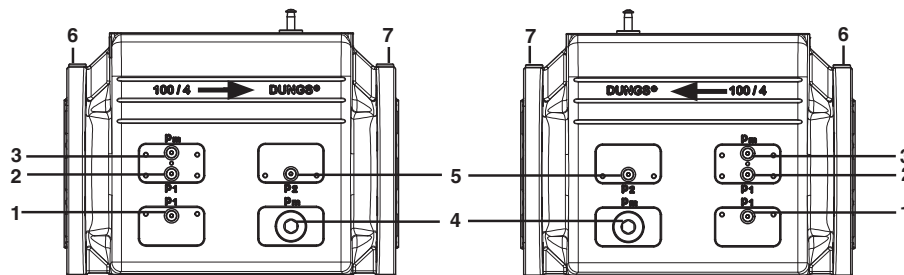
Dimensions



¹ EN 558, range 1
³ DN as per EN 1092-1:2007 PN 16 (raised face)
⁴ NPS as per ASME 16.5 Class 150 (raised face)

Type	Size	Dimensions					Weight	Input volume	Output volume
		a	b	c	d	g			
MBE-S-065...	³⁺⁴ DN 65	290 mm	106 mm	382 mm	180 mm	136 mm	13.5 kg	4.21 l	0.86 l
MBE-S-080...	³⁺⁴ DN 80	310 mm	106 mm	382 mm	193 mm	146 mm	14.5 kg	4.88 l	1.03 l
MBE-S-100-...	³ DN 100	350 mm	106 mm	382 mm	225 mm	171 mm	17.0 kg	6.93 l	1.48 l
MBE-S-125-...	³ DN 125	400 mm	118 mm	382 mm	253 mm	196 mm	18.5 kg	9.60 l	2.17 l
MBE-S-150-...	³⁺⁴ DN 150	480 mm	132 mm	382 mm	282 mm	216 mm	23.9 kg	12.73 l	3.2 l

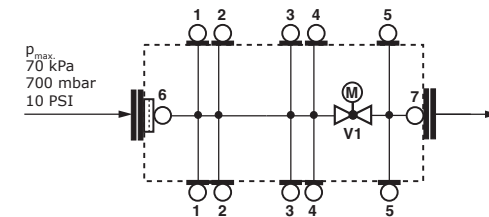
Pressure taps



1, 2, 3, 5
Sealing plug G 1/8 ISO 228

4
G 3/4 for system accessories

6, 7
Sealing plug G 1/4 ISO 228



ValveBody-S		
Designation	Nominal diameter	Item number
VB-065-S	DN 65	299826
VB-080-S	DN 80	299827
VB-100-S	DN 100	299828
VB-125-S	DN 125	299829
VB-150-S	DN 150	299830



MBE-S components



ValveDrive							
Designation	Item number	Voltage	Valve function	Regulator function	Close position indicator switch	Position indicator	Operating mode display
VD-V-AC	272262	100-240 VAC 50/60 Hz	x			x	x
VD-V-AC-POC	275358		x		x	x	x
VD-R-AC	274654		x	x		x	x
VD-R-AC-POC	275361		x	x	x	x	x
VD-V-DC	275359	24 VDC	x			x	x
VD-V-DC-POC	275360		x		x	x	x
VD-R-DC	275362		x	x		x	x
VD-R-DC-POC	275363		x	x	x	x	x

PressureSensor						
Designation	Item number	Max. operating pressure	Outlet pressure			
			Min.		Max.	
			[kPa]	["W.C.]	[kPa]	["W.C.]
PS-0	275265	20 kPa	-0.5	-2	0.5	2
PS-10/40	275263	70 kPa	0.4	1.6	10	40
PS-50/200	275264	70 kPa	2	8	50	200
Bus cable 1.5 m	276911	-	-	-	-	-

MBE-S components



ValveDrive Set

Designation	Item number	VD-R	PS	BUS cable	Pressure switch
VD-R-AC SET 10/40	279299	VD-R-AC	PS-10/40	incl.	-
VD-R-AC SET 50/200	279300	VD-R-AC	PS-50/200	incl.	-
VD-R-AC SET 0	290480	VD-R-AC	PS-0	incl.	-
VD-R-AC SET GW 10/40	292184	VD-R-AC	PS-10/40	incl.	GW 150 A5/1
VD-R-AC SET GW 50/200	292187	VD-R-AC	PS-50/200	incl.	GW 500 A5/1



- **Pressure controller**

<https://www.dungs.com/en/productgroups/pressure-switches-for-gas-and-air>

- **Manometer**

<https://www.dungs.com/en/product/manometers-accessories-pressure-gauge-push-button-cock-pressure-gauge-shutoff-valve>

- **Plugs**

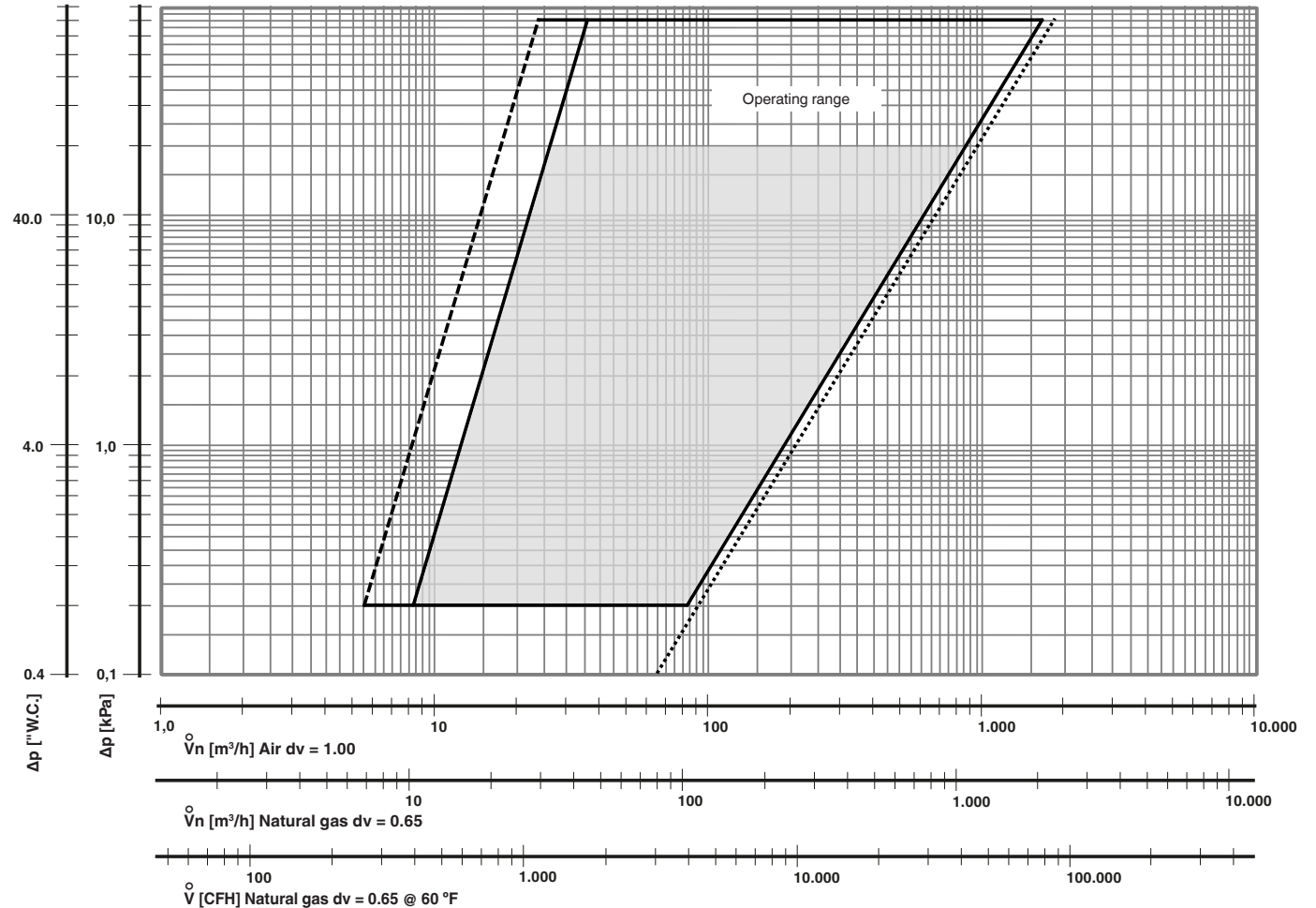
Flow diagram

MBE-S-065-...

Operating range as per EN 88-1 / EN 88-3

Basis
+15 °C, 101.3 kPa / 60 °F, 407 "W.C.
dry

- MBE-S-...-V
- MBE-S-...-R
- - - - - $p_2 < 10.0 \text{ kPa} / 40 \text{ "W.C.}$
- $p_2 = 0 \text{ kPa} / 0 \text{ "W.C.}$



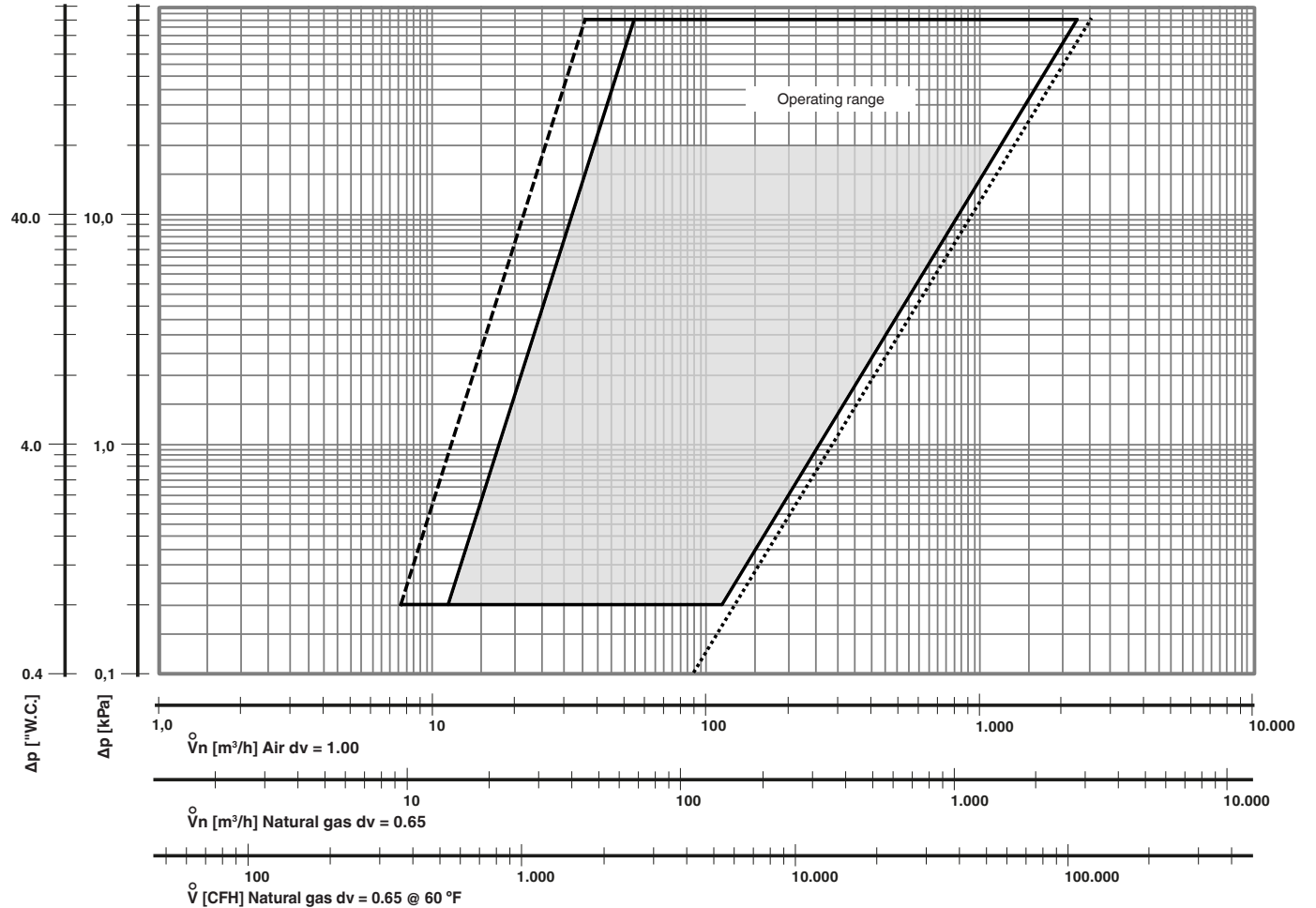
Flow diagram

MBE-S-080-...

Operating range as per EN 88-1 / EN 88-3

Basis
+15 °C, 101.3 kPa / 60 °F, 407 "W.C.
dry

- MBE-S-...-V
- MBE-S-...-R
- - - - - $p_2 < 10.0 \text{ kPa} / 40 \text{ "W.C.}$
- $p_2 = 0 \text{ kPa} / 0 \text{ "W.C.}$



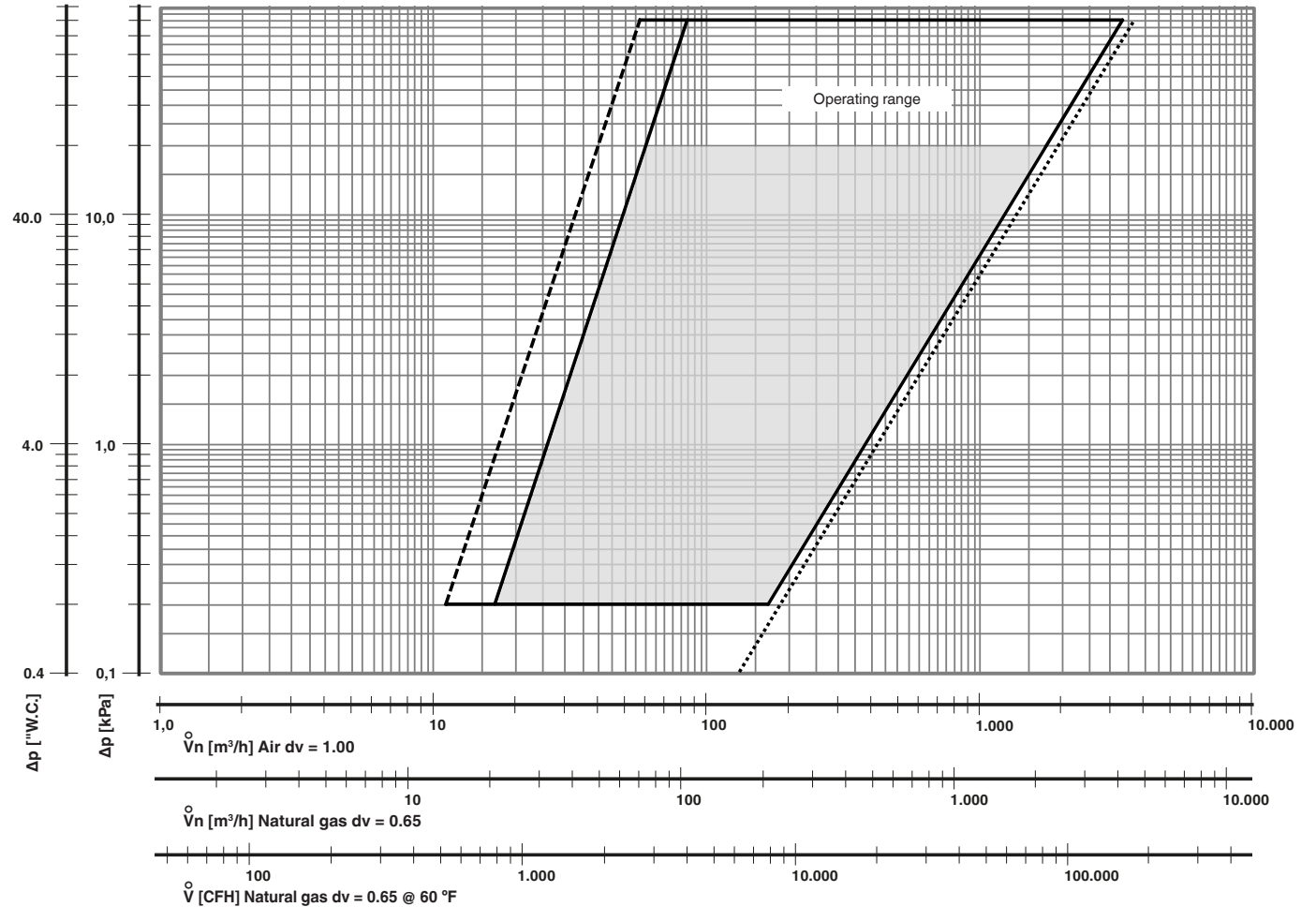
Flow diagram

MBE-S-100-...

Operating range as per EN 88-1 / EN 88-3

Basis
+15 °C, 101.3 kPa / 60 °F, 407 "W.C.
dry

- MBE-S-...-V
- MBE-S-...-R
- - - - - $p_2 < 10.0 \text{ kPa} / 40 \text{ "W.C.}$
- $p_2 = 0 \text{ kPa} / 0 \text{ "W.C.}$



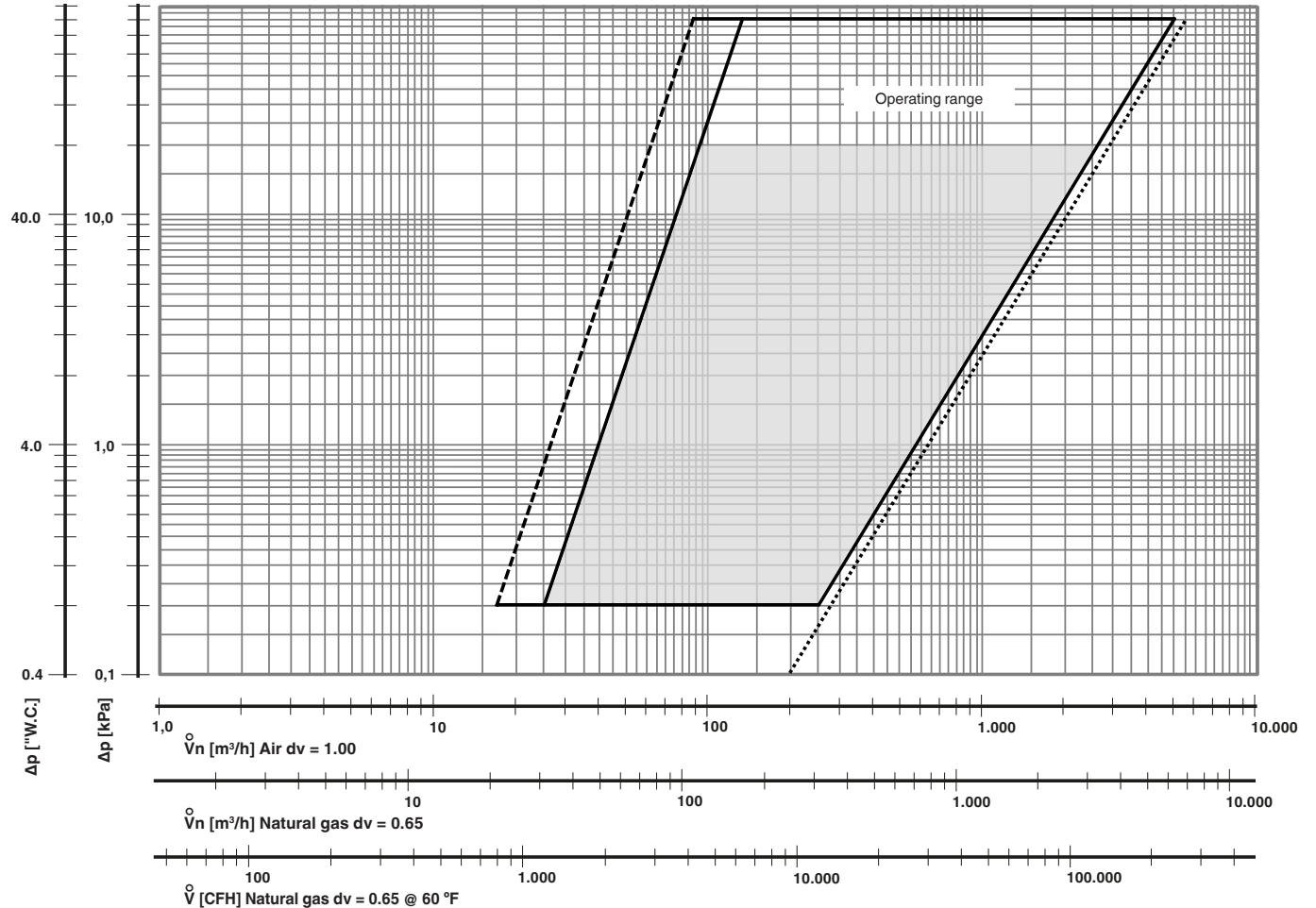
Flow diagram

MBE-S-125-...

Operating range as per EN 88-1 / EN 88-3

Basis
+15 °C, 101.3 kPa / 60 °F, 407 "W.C.
dry

- MBE-S-...-V
- MBE-S-...-R
- - - - - $p_2 < 10.0 \text{ kPa} / 40 \text{ "W.C.}$
- $p_2 = 0 \text{ kPa} / 0 \text{ "W.C.}$



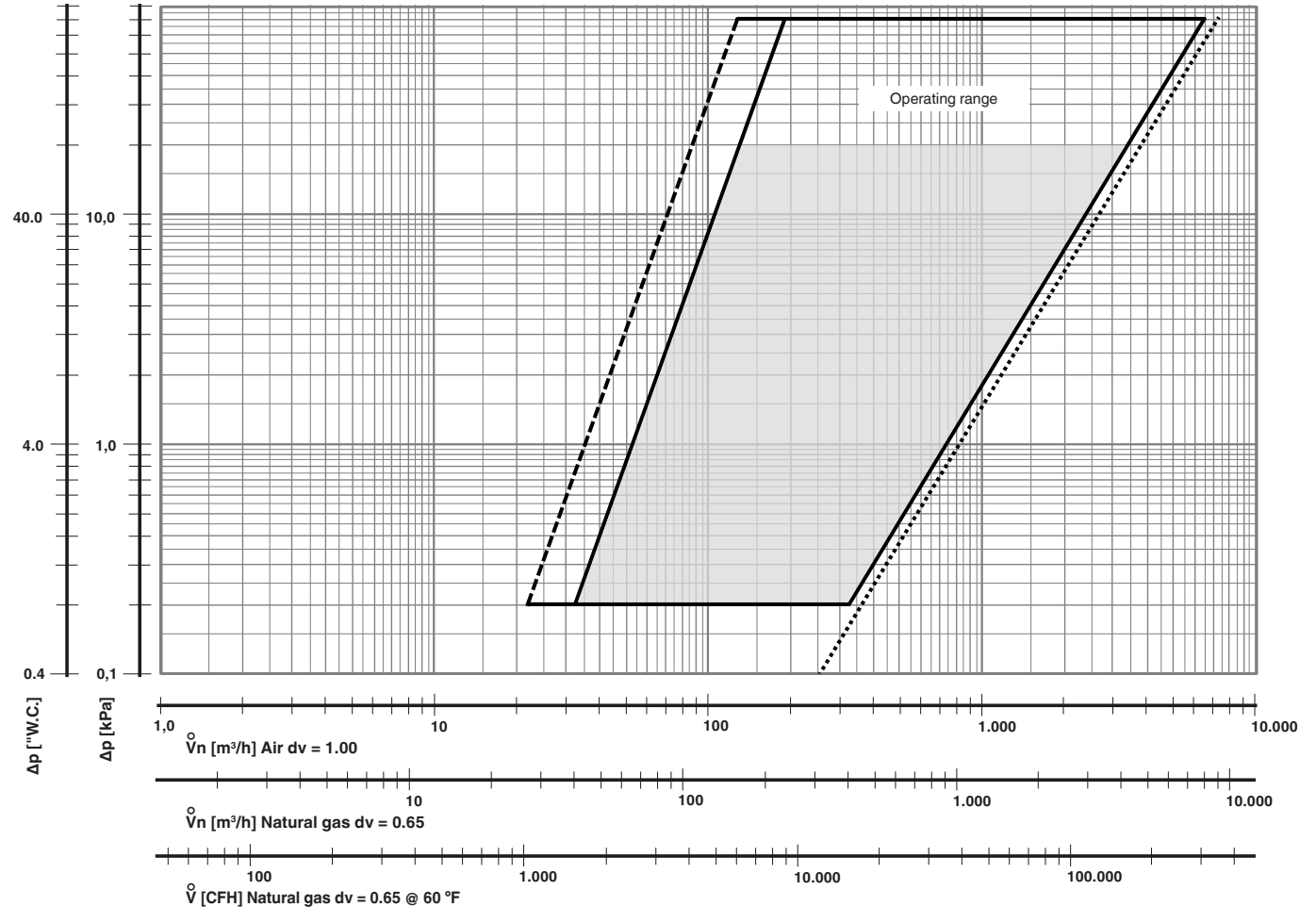
Flow diagram

MBE-S-150-...

Operating range as per EN 88-1 / EN 88-3

Basis
+15 °C, 101.3 kPa / 60 °F, 407 "W.C.
dry

- MBE-S-...-V
- MBE-S-...-R
- - - - - $p_2 < 10.0 \text{ kPa} / 40 \text{ "W.C.}$
- $p_2 = 0 \text{ kPa} / 0 \text{ "W.C.}$



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

$$f = \sqrt{\frac{\text{air density}}{\text{density of the gas used}}}$$

Type of gas	Density [kg/m³]	dv	f
Natural gas	0.81	0.65	1.24
City gas	0.58	0.47	1.46
Liquid gas	2.08	1.67	0.77
Air	1.24	1.00	1.00
Hydrogen	0.085	0.069	3.82

Subject to technical modification in the interest of technical progress.

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